DV-100

User's Guide

- PN R5905196
- Revision 01

BARCO

Visibly yours

DV-100 • User's Guide

Copyright

© Barco, Inc. May 2012

All rights reserved. No part of this document may be copied, reproduced or translated. It shall not otherwise be recorded, transmitted or stored in a retrieval system without the prior written consent of Barco.

Notice

Barco provides this manual "as is" without warranty of any kind, either expressed or implied, including but not limited to the implied warranties or merchantability and fitness for a particular purpose. Barco may make improvements and/or changes to the product(s) and/or the program(s) described in this publication at any time without notice.

This publication could contain technical inaccuracies or typographical errors. Changes are periodically made to the information in this publication; these changes are incorporated in new editions of this publication.

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case the user will be responsible for correcting any interference.

Guarantee and Compensation

Barco provides a guarantee relating to perfect manufacturing as part of the legally stipulated terms of guarantee. On receipt, the purchaser must immediately inspect all delivered goods for damage incurred during transport, as well as for material and manufacturing faults Barco must be informed immediately in writing of any complaints.

The period of guarantee begins on the date of transfer of risks, in the case of special systems and software on the date of commissioning, at latest 30 days after the transfer of risks. In the event of justified notice of compliant, Barco can repair the fault or provide a replacement at its own discretion within an appropriate period. If this measure proves to be impossible or unsuccessful, the purchaser can demand a reduction in the purchase price or cancellation of the contract. All other claims, in particular those relating to compensation for direct or indirect damage, and also damage attributed to the operation of software as well as to other services provided by Barco, being a component of the system or independent service, will be deemed invalid provided the damage is not proven to be attributed to the absence of properties guaranteed in writing or due to the intent or gross negligence or part of Barco.

If the purchaser or a third party carries out modifications or repairs on goods delivered by Barco, or if the goods are handled incorrectly, in particular if the systems are commissioned operated incorrectly or if, after the transfer of risks, the goods are subject to influences not

agreed upon in the contract, all guarantee claims of the purchaser will be rendered invalid. Not included in the guarantee coverage are system failures which are attributed to programs or special electronic circuitry provided by the purchaser, e.g. interfaces. Normal wear as well as normal maintenance are not subject to the guarantee provided by Barco either.

The environmental conditions as well as the servicing and maintenance regulations specified in this manual must be complied with by the customer.

Trademarks

Brand and product names mentioned in this manual may be trademarks, registered trademarks or copyrights of their respective holders. All brand and product names mentioned in this manual serve as comments or examples and are not to be understood as advertising for the products or their manufacturers.

DisplayPort and the DisplayPort logo are trademarks or registered trademarks of the Video Electronics Standards Association (VESA) in the United States and other countries.

Company Address

Barco Media and Entertainment
11101 Trade Center Drive
Rancho Cordova, California 95670
USA

- Telephone: (916) 859-2500
- Fax: (916) 859-2515
- Website: **www.barco.com**

Barco N.V.
Noordlaan 5
8520 Kuurne
BELGIUM

- Telephone: +32 56.36.82.11
- Fax: +32 56.35.16.51
- Website: **www.barco.com**

Technical Support (USA)

- Telephone: (866) 374-7878 — 6 a.m. to 10 p.m. (PST), 7 days per week
- E-mail: folsomsupport@barco.com
- Online: **www.barco.com/esupport**

Technical Support (Europe, Middle East, Asia)

- Telephone: 0800900410
- Online: **www.barco.com/support/eSupport.aspx**

Operators Safety Summary

The general safety information in this summary is for operating personnel.

Do Not Remove Covers or Panels

There are no user-serviceable parts within the unit. Removal of the top cover will expose dangerous voltages. To avoid personal injury, do not remove the top cover. Do not operate the unit without the cover installed.

Power Source

This product is intended to operate from a power source that will not apply more than 230 volts rms between the supply conductors or between both supply conductor and ground. A protective ground connection by way of grounding conductor in the power cord is essential for safe operation.

Grounding the Product

This product is grounded through the grounding conductor of the power cord. To avoid electrical shock, plug the power cord into a properly wired receptacle before connecting to the product input or output terminals. A protective-ground connection by way of the grounding conductor in the power cord is essential for safe operation.

Use the Proper Power Cord

Use only the power cord and connector specified for your product. Use only a power cord that is in good condition. Refer cord and connector changes to qualified service personnel.

Use the Proper Fuse

To avoid fire hazard, use only the fuse having identical type, voltage rating, and current rating characteristics. Refer fuse replacement to qualified service personnel.

Do Not Operate in Explosive Atmospheres

To avoid explosion, do not operate this product in an explosive atmosphere.

Terms In This Manual and Equipment Labeling

WARNING

Highlights an operating procedure, practice, condition, statement, etc., which, if not strictly observed, could result in injury to or death of personnel.

Note	Highlights an essential operating procedure, condition or statement.

CAUTION

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

AVERTISSEMENT!

Le point d´exclamation dans un triangle equilatéral signale à alerter l´utilisateur qu´il y a des instructions d´operation et d´entretien tres importantes dans la litérature qui accompagne l´appareil.

VORSICHT

Ein Ausrufungszeichen innerhalb eines gleichwinkeligen Dreiecks dient dazu, den Benutzer auf wichtige Bedienungs-und Wartungsanweisungen in der Dem Great beiliegenden Literatur aufmerksam zu machen.

Disposal of the Product (Waste Electrical and Electronic Equipment)

This symbol on the product indicates that, under the European Directive 2002/96/EC governing waste from electrical and electronic equipment, this product must not be disposed of with other municipal waste. Please dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

For more information about recycling of this product, please contact your local city office or your municipal waste disposal service. For details, please visit the Barco website at: **http://www.barco.com/en/AboutBarco/weee**

Turkey RoHS Compliance

Türkiye Cumhuriyeti: EEE Yönetmeliğine Uygundur
Republic of Turkey: In conformity with the EEE Regulation

中国大陆 RoHS
Chinese Mainland RoHS

根据中国大陆《电子信息产品污染控制管理办法》（也称为中国大陆 RoHS），以下部分列出了 Barco 产品中可能包含的有毒和 / 或有害物质的名称和含量。中国大陆 RoHS 指令包含在中国信息产业部 MCV 标准：“ 电子信息产品中有毒物质的限量要求 ” 中。

According to the “China Administration on Control of Pollution Caused by Electronic Information Products” (Also called RoHS of Chinese Mainland), the table below lists the names and contents of toxic and/or hazardous substances that Barco’s product may contain. The RoHS of Chinese Mainland is included in the MCV standard of the Ministry of Information Industry of China, in the section “Limit Requirements of toxic substances in Electronic Information Products”.

零件项目（名称） Component Name	有毒有害物质或元素 Hazardous Substances or Elements					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr6+)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印制电路配件 Printed Circuit Assemblies	O	O	O	O	O	O
插入式印制电路配件 Plug in Printed Circuit Assembly	O	O	O	O	O	O
外接电（线）缆 External Cables	O	O	O	O	O	O
底架 Chassis	O	O	O	O	O	O
电源供应器 Power Supply Unit	O	O	O	O	O	O
內部线路 Internal wiring	O	O	O	O	O	O
显示（器） Display	O	O	O	O	O	O
散热片（器） Heatsinks	O	O	O	O	O	O
风扇 Fan	O	O	O	O	O	O
光盘说明书 CD Manual	O	O	O	O	O	O
正面（前）面板 Front panel	O	O	O	O	O	O

O: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下 .
O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求.
X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.

在中国大陆销售的相应电子信息产品（EIP）都必须遵照中国大陆《电子信息产品污染控制标识要求》标准贴上环保使用期限（EFUP）标签。Barco 产品所采用的 EFUP 标签（请参阅实例，徽标内部的编号使用于制定产品）基于中国大陆的《电子信息产品环保使用期限通则》标准。

All Electronic Information Products (EIP) that are sold within Chinese Mainland must comply with the “Electronic Information Products Pollution Control Labeling Standard” of Chinese Mainland, marked with the Environmental Friendly Use Period (EFUP) logo. The number inside the EFUP logo that Barco uses (please refer to the photo) is based on the “Standard of Electronic Information Products Environmental Friendly Use Period” of Chinese Mainland.

Change History

The following table lists the changes to the DV-100 User's Guide.

Table 0-1. Change History

Rev	Date	ECO #	Description	Approved By
01	May 2012		Initial release	C. Byrne

Table of Contents

Chapter 1 Introduction 1

Chapter Structure 1
How to Use This Guide 2
- Navigating 2
- Table of Contents and Index 2

Conventions 2
Terms and Definitions 3
DV-100 Overview 4
- DV-100 Universal Video Processor 4
- DV-100 Features 4
- Control Overview 6
- Analog Format Connection Table 6

Chapter 2 Hardware Orientation 7

In This Chapter 7
DV-100 Front Panel 8
- The Display Section 9
- The Menu Navigation Section 9
- Menu Access Buttons 10
- Input Buttons 11
- The LOGO Button 11
- The BLACK Button 11
- The FRZ Button 11
- Using Front Panel Buttons 12

DV-100 Rear Panel 12
- Input Video Connectors 13
- Output Video Connectors 13
- Configurations for Connecting LED Display Tiles 13

Chapter 3 Hardware Installation 15

In This Chapter 15
Safety Precautions 16
Unpacking and Inspection 16
Site Preparation 16
Rack-Mount Installation 16
Cable and Adapter Information 17
- Power Cord and Line Voltage Selection 17

Installation 19
- Installation Requirements 20
- Installing the DV-100 20

Chapter 4 Menu Orientation 23

In This Chapter 23
Power-Up Initialization 24
Quick Setup and Operation 25
DV-100 Menu Tree 27
Using the Menu System 28
Making a Menu Selection 29
Exiting a Menu 29
Answering a Menu Query 29
Quick Function Reference 30
About the Status Menu 31
About the Setup Menu 32
Configuring Inputs 33
Input Menu Tree 33
Input Menu Functions and Submenus 34
Setting the Input Format 34
Selecting the Input Type 34
Selecting the Colorspace 35
Using 1:1 Sample 36
Setting the Aspect Ratio 36
Sizing an Image 36
Masking an Image 39
Using Mask Presets 39
Resetting Masking Effects 41
Adjusting Timing Parameters 41
Adjusting Edge Timings 42
Setting Input Contrast and Brightness 42
Setting Input Color Balance 43
Adjusting Gamma 43
Processing Interlaced and Film Signals 43
About Input Configurations 45
Configuring Outputs 49
Output Menu Tree 49
Output Menu Functions and Submenus 50
Working with Test Patterns 54
Setting Up a Test Pattern 54
Acquiring an Input Signal 55
Creating Custom Formats 57
Custom Formats Menu Tree 57
Custom Formats Menu Functions and Submenus 57
Creating and Saving Views 62
Creating a View 62
Saving a View to an Input 63
Recalling an Input’s Saved View 63
Resetting an Input’s Default View 63
Saving a View to the System 63
Recalling a System View 65
Deleting a View from the System 65
About Transition Effects 66
Setting Transitions 67
Using the System Menu 68
The System Menu Tree 68

System Menu Functions and Submenus 69
Using a Logo or Internal Black 73
About the LOGO Button 74
Displaying a Logo 75
Deleting a Logo 76
Erasing a Logo 76
Displaying Internal Black 76
Setting up an LED Display 78
Using the Tech Support Menu 79
Restoring Factory Default Settings 80
Restoring All Factory Settings 80
Retaining the IP Address When Restoring Factory Settings 80

Chapter 5 Web Remote Control Operations 83

In This Chapter 83
Web Interface Overview 84
Prerequisites to Using the Web Interface 84
Accessing the Web Interface 85
Obtaining System Information with the Web Interface 85
Backing Up and Restoring Data with the Web Interface 86
Backing Up Data with the Web Interface 86
Restoring Saved Data with the Web Interface 87
Web App Interface Introduction 88
Accessing the Web App Interface 89
About the Web App Interface 90
About the Front Panel Emulator 90
Web App Interface Features 91
Using Web App Interface Buttons and Sliders 92
Using Web App Interface Menus 93
Web App Interface Menu Tree 97
Working with the Home Page 98
Changing Input Formats with the Web App Interface 98
Locking the Front Panel with the Web App Interface 99
Saving System State with the Web App Interface 99
Refreshing the Web App Interface 99
Transitioning to a Logo or Black with the Web App Interface 99
Freezing an Image with the Web App Interface 100
Configuring Inputs with the Web App Interface 100
Working with the Input Main Page 101
Adjusting Input Color Balance with the Web App Interface 101
Sizing, Positioning, and Masking an Image 103
Saving and Resetting Input Configurations 104
Configuring LED Setup with the Web App Interface 105
Setting an Area of Interest with the Web App Interface 105
Setting Pan/Zoom with the Web App Interface 106
Setting Up Test Patterns with the Web App Interface 108
Creating Pan and Zoom Settings with the Web App Interface 109
Viewing and Resetting Recent Changes 110
Remotely Accessing Front-Panel Functions 111
Launching the Front Panel Emulator 112
Exiting the Front Panel Emulator 114

Appendix A Specifications 115

In This Appendix 115
Input Specifications 116
Output Specifications 117
User Control Specifications 118
Physical and Electrical Specifications 118
Communications Specifications 119
Standard Connector Pinouts 120
Analog 15-pin D Connector Pinouts 120
DisplayPort Connector Pinouts 121
DVI Connector Pinouts 122
Ethernet Connector Pinouts 123
HDMI Connector Pinouts 124
Input Resolutions 125

Appendix B Upgrading Firmware 131

In This Appendix 131
Upgrading Firmware Using the Front Panel 131
Upgrading Firmware Using the Web Interface 131
Automatically Upgrading Firmware Using the Web Interface 132
Selecting a Firmware File to Upload with the Web Interface 132

Appendix C Contact Information 135

In This Appendix 135
Warranty 135
Return Material Authorization (RMA) 135
Contact Information 136

1. Introduction

This chapter is designed to introduce you to the DV-100 and to the content of and conventions used in this guide. The following topics are included in this chapter:

- Chapter Structure
- How to Use This Guide
- Conventions
- Terms and Definitions
- DV-100 Overview

Chapter Structure

The following chapters provide instructions for all aspects of DV-100 operations:

- Chapter 1, **Introduction**, provides a system overview, a list of features, and discusses easy ways to use this guide.
- Chapter 2, **Hardware Orientation**, explains the DV-100's front and rear panel components in detail.
- Chapter 3, **Hardware Installation**, provides comprehensive system installation instructions.
- Chapter 4, **Menu Orientation**, explains the system's menus, and provides basic menu navigation procedures.
- Chapter 5, **Web Remote Control Operations**, provides complete details for using DV-100 in a remote control configuration with a Web Interface.
- Appendix A, **Specifications**, lists the DV-100's input, output, video, mechanical and power specifications, and includes connector pinouts.
- Appendix B, **Upgrading Firmware**, provides a detailed procedure for upgrading DV-100 software.
- Appendix C, **Contact Information**, lists important contact, RMA, warranty and technical support details.

How to Use This Guide

Following are important tips for streamlining your use of this User's Guide in its electronic PDF form.

Navigating

Use Acrobat Reader's bookmarks to navigate to the desired location. All chapter files have the same bookmark structure for instant navigation to any section. Please note:

- Extensive hyperlinks are provided within the chapters.
- Use Acrobat's **Go to Previous View** and **Return to Next View** buttons to trace your complete navigational path.
- Use the **Previous Page** and **Next Page** buttons to go to the previous or next page within a file.
- Use Acrobat's extensive search capabilities, such as the **Find** tool and **Search Index** tool to perform comprehensive searches as required.

Table of Contents and Index

Use the document's **Table of Contents** bookmarks to navigate a desired topic. Click any item to instantly jump to that section of the guide.

You can also use the **Index** to jump to specific topics within a chapter. Each page number in the **Index** is a hyperlink.

Conventions

The following conventions are used throughout this guide:

- The symbol ■ denotes an operations procedure.
- The symbol ▲ denotes an example.
- Entries written in bold-face letters denote physical buttons, menus, and key features. Button names are in capital letters.

  ▲ **Example:** Press **LOGO** to begin capturing a still image.
- When a sequence of menu selections is required to complete a given procedure, either on the front panel or from the Web Interface, the "**>**" symbol is used to divide successive menu selections.

  ▲ **Example:** To access the **Set Static IP Menu**, select **System** > **Ethernet** > **Set Static IP**.

Terms and Definitions

The following terms and definitions are used throughout this guide:

- **Area of Interest** — The portion of the output display that a video image occupies.
- **Composite Video** — A color video format that combines YUV signals into one channel, transmitting brightness/luma (Y) and colors/chroma (U and V) over one cable.
- **Computer Video** — A generic term indicating video that originates from a computer platform. A progressive scan signal that follows VESA (Video Electronics Standards Association) standards, with typical resolutions of 800 x 600, 1024 x 768, 1280 x 1024, etc.
- **Logo** — A full-screen still image that you can capture, import, and store for subsequent display by the DV-100.
- **Menu** — A scrollable list of options available on the front-panel display or the Web Interface.
- **NTSC** (National Television Standards Committee) — The oldest standard for color picture broadcasting. NTSC is a standard definition format that operates at a frequency of 59.94Hz, with 525 lines, 59.94 fields and 29.94 frames per second.
- **PAL** (Phase Alternating Line) — PAL is the predominant TV standard in Europe. PAL is a standard definition format that operates at a frequency of 50Hz, with 625 lines, 50 fields, and 25 frames per second.
- **RGB** — The red, green and blue color signal components.
- **RGBHV** — Defines a connection scheme with five lines: one for red, one for green, one for blue, one for the horizontal sync and one for the vertical sync. This is the standard used in VGA and other analog PC computer monitors.
- **RGBS** — Defines a connection with four signals, to transmit video and sync information. Vertical and horizontal sync are combined on a single channel.
- **RGsB** — Defines a connection with three signals, to transmit video and sync information. Here, the sync information is transmitted on the green channel.
- **SDI** (Serial Digital Interface) — A digital representation of a video signal that is distributed via a single coaxial cable.
- **View** — The portion of the video image that appears within the Area of Interest. A view is created using pan and/or zoom settings, and can be saved in non-volatile memory.
- **Y/C** — A video signal in which color and brightness information is transmitted separately (luminance Y, chrominance C).

DV-100 Overview

The following topics are discussed in this section:

- **DV-100 Universal Video Processor**
- **DV-100 Features**
- **Control Overview**

DV-100 Universal Video Processor

The DV-100 is a high-performance LED processor featuring an all-in-one video scaler, scan converter, switcher, and transcoder. The DV-100 accepts a wide range of user-selectable video input signals — including RGB, HDTV, DisplayPort, component, S-video, composite (NTSC, PAL) and HD/SDI — into your Barco V-Series LED Displays. Using the DV-100, you can scale video sources while maintaining a high quality image. The DV-100 supports resolutions up to WQXGA (2560x1600) @ 60Hz.

The DV-100 supports **DisplayPort** and **HDMI** signal formats, while still supporting DVI, SDI, and analog signals.

You can operate the DV-100 using convenient front-panel controls to activate inputs, navigate through the menu system, quickly access key menus, freeze the video, and transition to a logo or internal black.

Using the DV-100 Web Interface, you also can remotely control all DV-100 features from a computer, tablet, smartphone, or other web-enabled mobile device. With the Web Interface's easy-to-use pages, menus and graphics, you can, for example, upgrade system firmware, run test patterns, and control inputs and outputs. For more information about the Web Interface, refer to Chapter 5, **Web Remote Control Operations**, on page 83.

DV-100 Features

The DV-100 provides the following features:

- System capabilities:
  - ~ High-resolution Athena scaler
  - ~ Transitions through black or a logo
  - ~ 2 RU chassis
  - ~ SD, HD, and 3Gbit SDI In/Loop
  - ~ Dual-link DVI In/Loop
  - ~ HDMI In/Out (HDCP is not supported)
  - ~ DisplayPort In
  - ~ HD-15 In/Out/Loop
  - ~ Ethernet control
  - ~ Programmable input **Extended Display Identification Data** (EDID)
  - ~ Remote control via a Web Interface.
  - ~ Front panel lockout for remote control applications
- Superior video processing:
  - ~ Supports input resolutions up to WQXGA (2560x1600) @60 Hz

  - Frame rate up to 120Hz for 1080p
  - 12-bit processing
  - 1:1 pixel sampling for analog inputs
  - Motion adaptive de-interlacing
- 64 independent input configuration memory presets
- Input video detection and auto-acquisition
- Input signal presence indicated on input source selection button
- Dimmable front-panel display
- Pan, Zoom, and Freeze effects
- Logo image capture and recall
- Low video delay

Control Overview

There are two ways to control the DV-100:

- The front panel provides access to all DV-100 operations. A dimmable screen displays DV-100 menus and queries. Menu buttons provide quick access to the Setup, Test Pattern, and Pan/Zoom menus. The **ADJUST** knob scrolls through menus and menu options. Input buttons activate rear-panel input connectors, and effects buttons freeze an image or transition to a logo or internal black. Refer to Chapter 4, **Menu Orientation**, on page 23 for information about front-panel operations.
- The DV-100 Web Interface is well suited to remote control, supporting intuitive point-and-click operation of all front-panel features. Using the Web Interface, you can also download and restore configuration files and logos, and upgrade DV-100 firmware. Refer to Chapter 5, **Web Remote Control Operations,** on page 83 for more information about the Web Interface.

All of these options include easy-to-use menus and controls.

Analog Format Connection Table

The HD-15 analog and DVI-I inputs, and the HD-15 output, enable you to work with a variety of video formats — including VGA, composite video, S-video and YUV component video.

- For RGB with H and V sync, use the HD-15 connector directly.
- Using a customer supplied HD-15 to 5 x BNC breakout cable, several input combinations are possible. Cells with check marks denote the connections required for the indicated format.

Table 1-1. Analog Input Combinations using Breakout Cable

Breakout Cable Wire Color		Composite Video (CVBS)	S-Video (Y/C)	YUV (YP_bP_r)	RGB Sync on Green	RGB Comp Sync	RGB Separate H V
R				✓ (P_r)	✓	✓	✓
G		✓	✓ (Lum)	✓ (Lum)	✓	✓	✓
B			✓ (Chroma)	✓ (P_b)	✓	✓	✓
H Sync						✓	✓
V Sync							✓

2. Hardware Orientation

In This Chapter

This chapter provides detailed information about the DV-100's hardware. The following topics are discussed:

- **DV-100 Front Panel**
- **DV-100 Rear Panel**

DV-100 Front Panel

The figure below illustrates the DV-100 front panel.

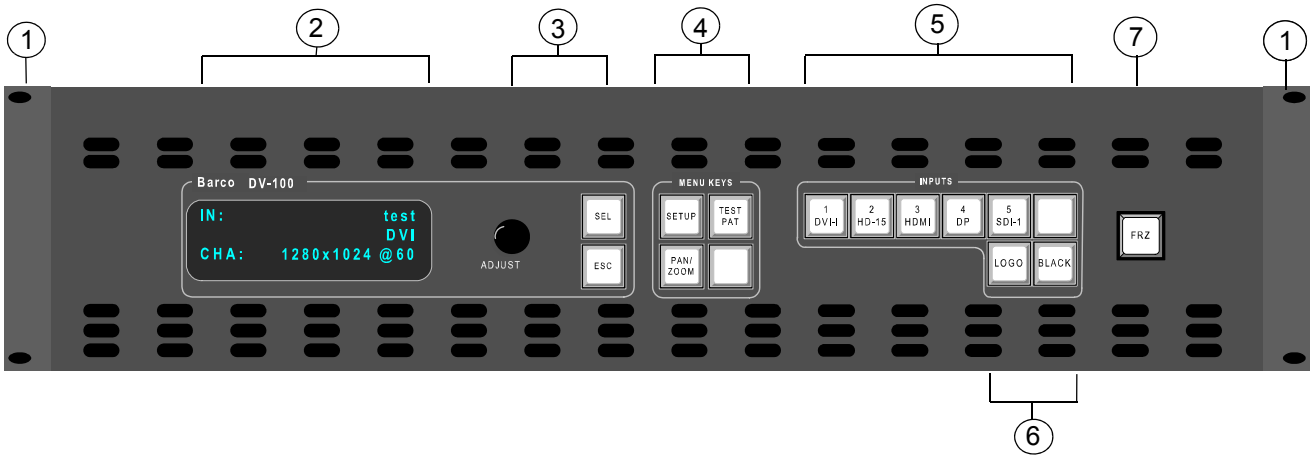


Figure 2-1. DV-100 Front Panel

1)	Chassis Handles	4)	Menu Access Buttons	7)	FRZ Button
2)	Display Section	5)	Input Buttons		
3)	Menu Navigation Section	6)	LOGO and BLACK Buttons		

Following are descriptions of each front panel control feature:

1) Chassis Handles

Two **Chassis Handles** are provided for ease of installation and transportation.

2) Display Section

The **Display Section** consists of a four-line display screen. Refer to The Display Section on page 9 for complete details.

3) Menu Navigation Section

The **Menu Navigation Section** includes the **ADJUST** knob, and two navigation buttons: **SEL** and **ESC**. Refer to The Menu Navigation Section on page 9 for more information.

4) Menu Access Buttons

The **Menu Access Buttons** provide quick access to specific locations in the menu system. Refer to Menu Access Buttons on page 10 for complete details.

5) Input Buttons

The five numbered **Input Buttons** correspond to the five rear-panel input connectors. Refer to Input Buttons on page 11 for information about the inputs.

6) LOGO and BLACK Buttons

The **LOGO** button enables you to capture a stored still image, and transition to and from the logo. Refer to the The LOGO Button section on page 11 for more information.

The **BLACK** button transitions the display image to and from black. Refer to The

BLACK Button on page 11 for details.

7) **FRZ Button**

FRZ (FREEZE) enables you to freeze a displayed image. Refer to The FRZ Button on page 11 for more information.

The Display Section

The **Display Section** consists of a 4-line x 24-character screen that shows all DV-100 menus, sub-menus, and messages. The display is dimmable.

At system startup, or when no menu buttons are selected, the screen displays the **Status Menu**. The following illustration shows a sample **Status Menu** in the display screen.

Figure 2-2. Status Menu (sample)

This menu provides information about the selected input, including:

- **Line 1** — The **input video format** in the form H active x V active @ Vertical refresh rate (i.e., 1920 x 1080 @ 30 Hz). If a custom configuration file is associated to the selected input, the name of the file appears on the display.
- **Line 2** — Genlock and input signal type including:
  - ~ The current status of Genlock for the output channel:
    - **IN#** — Lock to input number *n*
    - **N/A** —Freerun (Default)
  - ~ The type of input signal being processed. Input signal types are: CVBS, Y/C, SDI, RGB, YP_bP_r, DVI, HDMI, SDI, and DP.
- **Line 3** — The **output video format** in the form Hact x Vact @ vr Hz (i.e., 1280x1024 @ 60 Hz).

The Menu Navigation Section

The **Menu Navigation Section** includes three controls that aid in menu navigation:

- Turn the **ADJUST** knob to scroll through the menu items on the screen.
  - ~ Turn the knob counter-clockwise to scroll down.
  - ~ Turn the knob clockwise to scroll up.

  A navigation cursor (**>**) to the left of a menu item indicates the position of the scroll bar, as shown in the following illustration.

Figure 2-3. Navigation Cursor in the Transition Menu

- Press the **SEL** button to:
  - ~ Enter the **Setup Menu** tree from the **Status Menu**
  - ~ Select the menu item indicated by the navigation cursor
  - ~ Change or accept a parameter
  - ~ Answer **Yes** to menu queries

- Press the **ESC** button to exit a menu without making changes, to cancel an operation, to answer **No** to menu queries, or to return to the **Status Menu**. Each press takes you back up the menu tree one level.

Menu Access Buttons

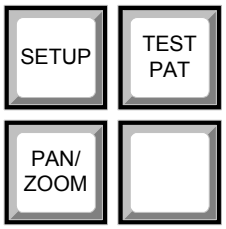


Figure 2-4. Menu Access Buttons

The **Menu Access Buttons** provide entry to specific locations in the menu system:

- The **SETUP** button accesses the **Setup Menu**, the DV-100's top-level menu. For information about **Setup Menu** options, refer to **About the Setup Menu** in Chapter 4 on page 32.
- Press **TEST PAT** to access the **Test Pattern Menu**, which sets up a test pattern on the selected output. For details about setting up a test pattern, refer to **Working with Test Patterns** in Chapter 4 on page 54.
- Press **PAN/ZOOM** to access the **ZOOM/PAN Menu**, from which you can set and save zoom and pan settings for an input channel. The **ZOOM/PAN Menu** provides the option to save settings in pixels or as a percentage of the original image. The default setting is **100% zoom**, **0% pan**. For more information about zooming and panning, refer to **Creating a View** in Chapter 4 on page 62.

Input Buttons

Input buttons 1 through 5 correspond to the five standard input connectors on the rear panel. These buttons select the source signal that you want to display.

Figure 2-5. DV-100 Input Buttons

- Press **Input Button 1** to select the source on the **DVI** (digital or universal analog) connector.

Note	A customer-supplied **DVI to HD-15 adapter** is required to connect analog video to the DVI connector.

- Press **Input Button 2** to select the source on the **HD-15** (universal analog) connector.
- Press **Input Button 3** to select the source on the **HDMI** connector.
- Press **Input Button 4** to select the source on the **DisplayPort** connector.
- Press **Input Button 5** to select the source on the **SDI-1** connector.

For details about supported resolutions for each input, refer to the **Input Video Connectors** section on page 13 of this chapter, or to the **Input Specifications** section of Appendix A, on page 116.

The LOGO Button

The **LOGO** button beneath the input buttons can serve as an additional image source. Using **LOGO**, you can capture, import, and store a still output frame in non-volatile memory, then transition to and from that still frame. For more information about using **LOGO**, refer to the **Using a Logo or Internal Black** section of Chapter 4 on page 73. For more information about transitioning, refer to the **Setting Transitions** section on page 67.

The BLACK Button

The **BLACK** button transitions the display to and from black. For more information about BLACK, refer to the **Displaying Internal Black** section of Chapter 4 on page 76.

The FRZ Button

Pressing the **FRZ** button temporarily freezes the displayed video. If **FRZ** is lit, the following actions turn it off:

- Pressing **FRZ** again
- Pressing the input button for the displayed image

When you freeze an image, the **PAN/ZOOM** button is not operational, and the **Input Setup** and **Views** menus are not accessible.

Using Front Panel Buttons

Pressing a front panel button once causes that button to light up. If the button is associated with a menu system, the display shows the top-level menu for that button. For example, pressing **SEL** at the **Status Menu** displays the **Setup Menu**. If the button performs a function, that function begins. For example, pressing **ESC** exits a menu or cancels an operation immediately.

There are three button states:

- **Lit** – Button is selected.
- **Dim** – Source or logo is present but not active.
- **Not lit** – Button is not selected.

DV-100 Rear Panel

The following figure illustrates the DV-100 rear panel.

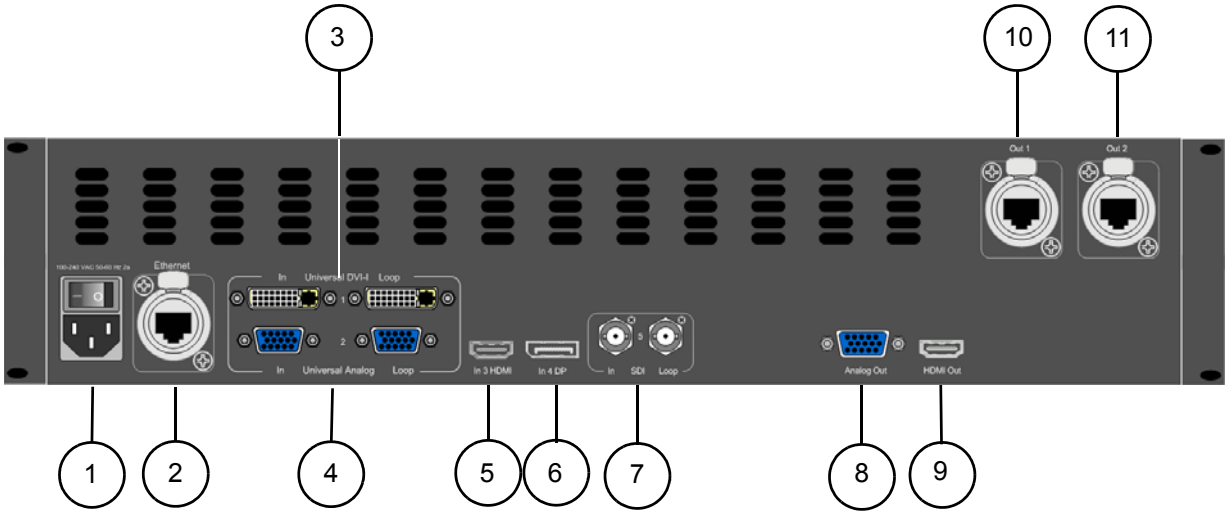


Figure 2-6. DV-100 Rear Panel

1)	AC Connector	7)	Input 5 — SDI-1 Input with Loop-through
2)	Ethernet Port	8)	Universal Analog Output
3)	Input 1 — DVI-I Input with Loop-through	9)	HDMI Output
4)	Input 2 — Analog Input with Loop-through	10)	Ethernet Out 1 to top 1280x512 of LED display
5)	Input 3 — HDMI Input (HDCP is not supported)	11)	Ethernet Out 2 to bottom 1280x512 of LED display
6)	Input 4 — DisplayPort Input		

Following are descriptions of each rear panel connector:

1) AC Connector

One **AC Connector** with a power switch is provided to connect the DV-100 to your facility's AC power source through the supplied power cord. The integral switch turns the unit on and off.

100-240 VAC, 47-63 Hz

2) **Ethernet Port**

One RJ-45 connector is provided for **10/100BaseT Ethernet** communications with the DV-100. The port is used for running the Web Interface and for diagnostics.

The Ethernet connector is compatible with:

~ Standard RJ-45 Ethernet cables

~ Neutrik EtherCon® series cables

For pinout details, refer to the **Standard Connector Pinouts** section in Appendix A, on page 120.

Input Video Connectors

On the system's rear panel, each of the input connectors maps to a corresponding input button on the front panel. For additional information about any connector, including pinouts and a list of supported formats, refer to Appendix A, **Specifications**, on page 115.

3) **Input 1** — DVI-I Input with Loop-through

4) **Input 2** — Analog Input with Loop-through

5) **Input 3** — HDMI Input (HDCP is not supported)

6) **Input 4** — DisplayPort Input

7) **Input 5** — SDI-1 Input with Loop-through

Output Video Connectors

The user sets the output format. Output connectors are active only if they support the selected format. If a connector cannot support the selected format, that connector is deactivated. Therefore, all connectors may not be active at the same time.

The default output format is 1280x1024 with adjustable frequency (50, 59.94, or 60 Hz). Outputs revert to the last **saved** state on power-up.

For additional information about any connector, including pinouts and a list of supported formats for each connector, refer to Appendix A, **Specifications**, on page 115.

8) **Universal Analog Output**

9) **HDMI Output**

10) **Ethernet Output 1 to LED display (top 1280x512)**

11) **Ethernet Output 2 to LED display (bottom 1280x512)**

Configurations for Connecting LED Display Tiles

The following figure illustrates two configurations for connecting LED display tiles. On the left, only Out 1 is needed because the total LED lines in all of the display tiles combined is less than or equal to 512. On the right, both Out 1 and Out 2 are needed because the total LED lines in all of the display tiles combined is more than 512 but less than or equal to 1024. In both cases, the maximum number of pixels supported on each line is 1280.

The sets of tiles are connected in a daisy-chain manner, fed by the Out 1 or Out 2 Ethernet cable. For example, Out 1 connects to the input of the tile in the lower-right corner of the top tile cluster, and the output of that tile connects to the input of the next tile to the left, and

so on.

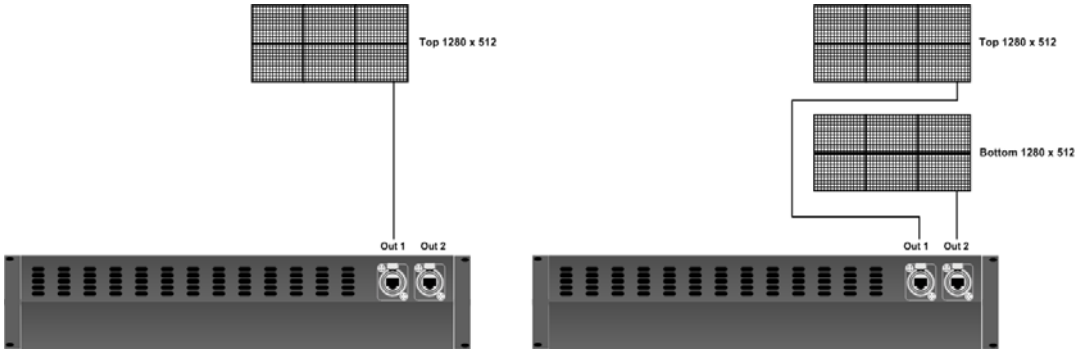


Figure 2-7. Configurations for Connecting LED Display Tiles

3. Hardware Installation

In This Chapter

This chapter provides comprehensive installation instructions for the DV-100 system's hardware. The following topics are discussed:

- **Safety Precautions**
- **Unpacking and Inspection**
- **Site Preparation**
- **Rack-Mount Installation**
- **Cable and Adapter Information**
- **Installation**

Safety Precautions

For all DV-100 installation procedures, please observe the following important safety and handling rules to avoid damage to yourself and the equipment:

- To protect users from electric shock, ensure that the chassis connects to earth via the ground wire provided in the AC power cord.
- The AC socket outlet should be installed near the equipment and be easily accessible.

Unpacking and Inspection

Before opening the DV-100 shipping box, inspect it for damage. If you find any damage, notify the shipping carrier immediately for all claims adjustments. As you open the box, compare its contents against the packing slip. If you find any shortages, contact your sales representative.

The DV-100 shipping box contains the DV-100 unit, a power cord, and a CD. Once you have removed all the components from their packaging and checked that all the components are present, visually inspect the unit to ensure there was no damage during shipping. If there is damage, notify the shipping carrier immediately for all claims adjustments.

Site Preparation

The environment in which you install your DV-100 should be clean, properly lit, free from static, and have adequate power, ventilation, and space for all components.

Rack-Mount Installation

The DV-100 chassis is designed to be rack mounted and is supplied with front rack-mount hardware.

Note The DV-100 chassis can also be used in a “tabletop” configuration, without rack mounting.

When rack mounting the DV-100 chassis, remember the following important points:

- Maximum ambient operating temperature for the unit is 40 degrees C.
- Leave at least one inch of space (front and rear) to ensure that the airflow through the fan and vent holes is not restricted.
- When installing multiple units into a rack, distribute them evenly to prevent hazardous conditions that may be created by uneven weight distribution.

- Rack mount each DV-100 chassis from the front rack ears using four rack screws (not supplied). Rack threads may be metric or otherwise — depending upon the rack type.
- Install the *lower* of the two mounting holes first.

Cable and Adapter Information

The table below provides information regarding cables used with the DV-100. When connecting to an DV-100, use high-quality shielded cables.

Table 3-1. DV-100 System Cables

Cable	Description	Note
Remote Connections		
RJ-45 Ethernet Cable	For use with DV-100 Web Interface	Customer Supplied
LED Display Connections		
RJ-45 Ethernet Cable, cat5 or better	For connection to your LED display.	Customer Supplied
Power Connections		
AC Power Cord	AC Power, 7 foot, 10A	1 Cord Supplied

Power Cord and Line Voltage Selection

The DV-100 is rated to operate with the following specifications:

Input Power: 100-240 VAC, 50-60 Hz

Power Consumption: 100 Watts maximum

The DV-100 performs line voltage selection automatically. No user controls are required. The AC power cords must be accessible so that they can be removed during field servicing.

Warning

When the DV-100 is used in the 230-volt mode, a UL listed line cord rated for 250 volts at 15 amps must be used and must conform to IEC-227 and IEC-245 standards. This cord will be fitted with a tandem prong-type plug.

The rear panel ON/OFF switch does not disconnect the unit from input AC power. To facilitate disconnection of AC power, the power cord must be connected to an accessible outlet near the unit.

Building Branch Circuit Protection: For 115 V use 20 A. For 230 V use 8 A.

Avertissement La choix de la ligne de voltage se réalise automatiquement par le DV-100 Transformateur Graphique. On n'a pas besoin du controller usager pour la choix de la ligne de voltage.

Warnung Das DV-100 gerät mu beim Anschlu an 240V ~ mit einer vom VDE auf 250V/10A geprüften Netzleitung mit einem Schukostecker ausgestattet sein.

Installation

With five input sources, two monitor outputs, and two LED-display outputs, there are many possible ways to configure an DV-100 installation. The following figure illustrates one possible installation for the DV-100.

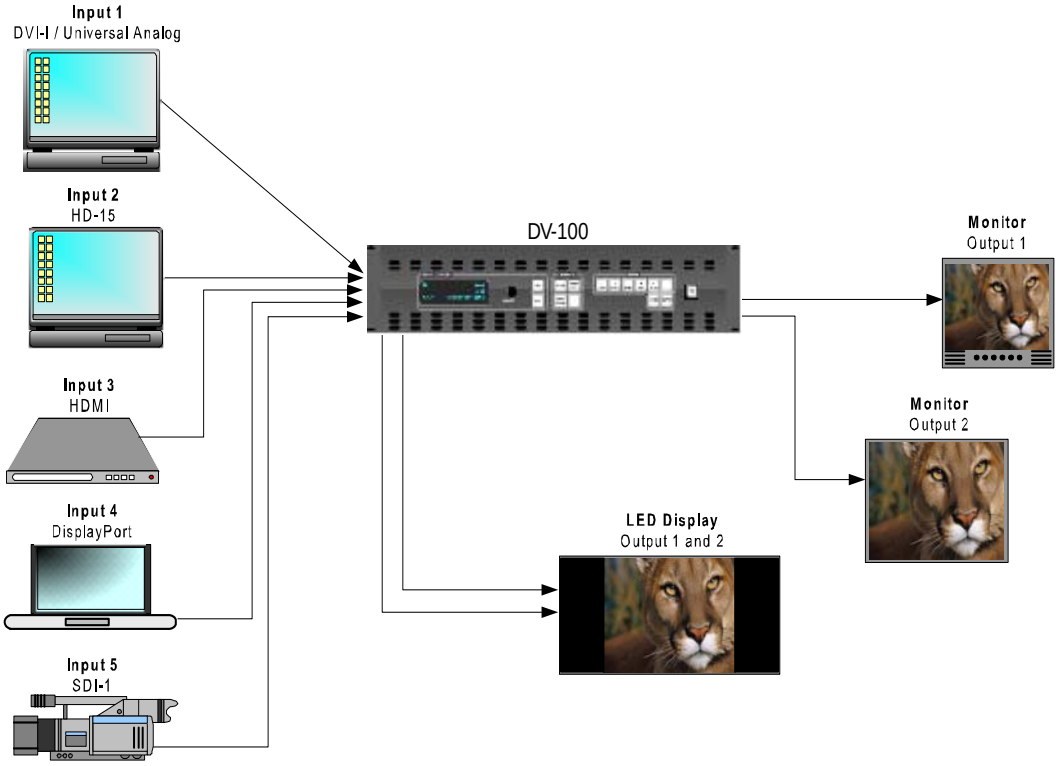


Figure 3-1. Diagram of an DV-100 Installation

In this installation:

- Each front-panel input button maps to the corresponding input connector on the rear panel. The DV-100's input connectors support a range of signal types and standards, including analog and digital NTSC, PAL, and SMPTE, as well as HDMI, DVI, and DisplayPort. Input resolutions up to WQXGA (2560x1600) are supported. For more information about each input, refer to **Input Video Connectors** in Chapter 2, on page 13.
- You can connect a variety of digital and analog devices to the DV-100's input connectors, including video cameras, PCs and laptops, notebooks or tablets.
- Two rear-panel monitor output connectors display a fixed video resolution of 1280x1024. For more information about each output, refer to **Output Video Connectors** in Chapter 2, on page 13.
- Two rear-panel Ethernet connectors for LED display. For details, see **Configurations for Connecting LED Display Tiles** in Chapter 2, on page 13.
- The DV-100 processes only one input source at a time. If you connect multiple output display devices, only one source image is output.

- You can further refine the placement of the image on the output displays using an Area of Interest, as described in **Setting the Area of Interest** on page 50 in Chapter 4, or by using zoom and pan settings, as described in **Creating a View** on page 62 in Chapter 4.

Installation Requirements

To set up the DV-100, you will need the following equipment:

Table 3-2. Equipment List, Basic DV-100 System

Qty.	Item	Note
1	DV-100 unit	
1	LED display	Customer supplied
1-2	Ethernet cables	Customer supplied, for LED display
1	Ethernet cable	For web interface and LED control software
1-5	Dedicated sources	Analog and/or digital video as required (customer supplied)

When connecting to an DV-100, use high-quality shielded cables.

If you intend to operate the DV-100 remotely using the Web Interface, you can do so over a wireless network. For this option, you will need a wireless router and access to a wireless network, along with a device such as a smartphone, computer or laptop, notebook or tablet.

Installing the DV-100

- Use the following procedure to install the DV-100:

1. Follow the unpacking procedures as listed in the **Unpacking and Inspection** section on page 16.
2. As required, refer to the **Physical and Electrical Specifications** section on page 118 in Appendix A for electrical and mechanical details.
3. As required, refer to the **DV-100 Rear Panel** section on page 12 in Chapter 2 for the locations of all connectors.
4. If you are rack mounting the DV-100 chassis, follow the rack mount procedures as outlined in the **Rack-Mount Installation** section on page 16.
5. **Ethernet Connections**
   a. Connect an Ethernet cable to a Switch.
   b. Ensure that the Switch is connected to a data port.
   c. Connect the Ethernet Switch to the DV-100's Ethernet port.

Note

As an alternate method, you can use a direct Ethernet connection or a wireless connection between the DV-100 and a web-enabled device.

6. **Source Connections**

d. Connect the video source(s) to the analog or digital input connectors as required.

7. **Output Connections**

e. To connect the DV-100 to a preview monitor, connect one of the following output connectors to the appropriate input of the display device:

- HDMI
- HD-15

8. **Power Connection** — Connect an AC power cord to the **AC Power Connector** on the rear of the DV-100 chassis, and then to AC outlets. Connect AC power cords (or AC adapters) to all peripheral equipment, such as Ethernet switches and monitors. Please note:

~ Connect each unit only to a properly rated supply circuit.

~ Reliable grounding (earthing) of rack-mounted equipment should be maintained.

9. **Power On** — Turn on power to all units.

10. **Web Interface Connection**

To configure your system for control from the DV-100's Web Interface, refer to Chapter 5, **Web Remote Control Operations**, on page 83. Following are prerequisites for remote web operations:

f. Ensure that your computer uses one of the following operating systems:

- Windows® XP, Windows Vista™, or Windows 7
- Mac OS® X
- Red Hat® Linux®

g. Turn on the DV-100's **DHCP** setting:

- On the **Setup Menu**, select **System** > **Ethernet**.
- Select **DHCP** and turn it **On**.

h. Verify the IP address of the DV-100. (Refer to Chapter 4, the section titled **Setting Ethernet Options** on page 69.)

i. Connect the DV-100's Ethernet port to the external device. The devices you can use to control the DV-100 remotely include:

- Smartphone (iPhone®, Android™, etc.)
- PC, notebook, laptop, or tablet with a compatible OS and browser

Note

HTML5 Web Application requires that you have an HTML5-compatible web browser installed, such as Google Chrome, Apple Safari® or another browser based on the Web Kit engine. Internet Explorer users can download Google Chrome Frame to make their browser compatible with the HTML5 Web.

There may be additional steps needed, such as turning on the DHCP feature or setting a static IP address. For more information, contact your network administrator or refer to Chapter 5.

4. Menu Orientation

In This Chapter

This chapter describes all DV-100 system menus, including how they are accessed and the functions or parameters that are available. The principal menu trees are presented in block diagram format throughout the chapter.

The following topics are included in this chapter:

- Power-Up Initialization
- Quick Setup and Operation
- DV-100 Menu Tree
- Using the Menu System
- Quick Function Reference
- About the Status Menu
- About the Setup Menu
- Configuring Inputs
- Configuring Outputs
- Working with Test Patterns
- Acquiring an Input Signal
- Creating Custom Formats
- Creating and Saving Views
- About Transition Effects
- Using the System Menu
- Using a Logo or Internal Black
- Setting up an LED Display
- Using the Tech Support Menu
- Restoring Factory Default Settings

Power-Up Initialization

Connect power to the DV-100, then locate the power switch on the rear panel and turn power **On**. While the system is initializing, the front-panel buttons light up one at a time, and the following messages are displayed.

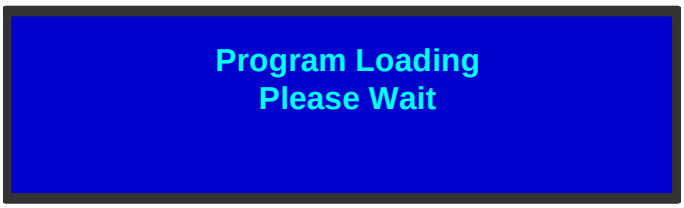


Figure 4-1. System Initialization Message 1

Figure 4-2. System Initialization Message 2

The version number in the preceding menu shows the software version that is installed. This version number changes as you install software upgrades.

When you initialize an DV-100 that has a stored logo, a message like the one in the following illustration appears during initialization.

Figure 4-3. Logo Initialization Message

For information about logos, refer to **Using a Logo or Internal Black** on page 73.

After system initialization is complete, the **Status Menu** appears.

Quick Setup and Operation

To quickly set up and begin operating your system, follow the steps in this section. Links are provided to the appropriate sections in this guide, if you require more information.

1. **Connect power** — Ensure that power is properly connected to the DV-100. (Chapter 3, **Installation**, page 19.)
2. **Connect inputs** — Connect all input sources to the DV-100. (Chapter 3, **Installation**, page 19.)
3. **Connect outputs** — Connect the output(s) on the DV-100 to your preview monitors and LED display. (Chapter 3, **Installation**, page 19.)
4. **Turn on power** — Turn on power to the DV-100 and to all peripheral equipment. (This chapter, **Power-Up Initialization**, page 24.)
5. **Factory reset** — If you are using the DV-100 for the first time, or if you are using an DV-100 that has just returned from another event, perform a full factory reset to restore default system configurations. (This chapter, **Restoring Factory Default Settings**, page 80.)
6. **Test output** — Turn on a test pattern, verify that you have an image, and make any necessary adjustments. When complete, turn off the test pattern. (This chapter, **Working with Test Patterns**, page 54.)
7. **Save output configuration** — After completing output adjustments, save the output configuration. (This chapter, **Saving an Output Configuration**, page 54.)
8. **Position the image** — From a single convenient menu, you can quickly place the image where you want it on the output display device, then scale it up or down, and apply masks if necessary. Then you can save your changes and press an input button to begin your presentation. (This chapter, **Setting up an LED Display**, page 78.)

Note

The preceding step provides a reliable shortcut when your setup does not require complex adjustments. Use this step instead of or in conjunction with steps 11 through 13.

9. **Set and adjust inputs** — As required, select an input and adjust color balance, timings, and any other settings necessary. (This chapter, **Configuring Inputs**, page 33.)
10. **Save input configuration** — After completing all adjustments for an input, save the input configuration. (This chapter, **Saving an Input Configuration**, page 45.)
11. **Repeat for each input** — Repeat the previous two steps for each input connected to the DV-100.
12. **Adjust system parameters** — As required, adjust system parameters such as DV-100 display brightness. (This chapter, **Using the System Menu**, page 68.)
13. **Save system configuration** — After completing all system adjustments, save the system configuration. (This chapter, **Saving System State**, page 73.)
14. **Ready to roll** — With all output, input and system configurations saved, press the desired input button.

Note

For advanced system operations, specific system adjustments and operating descriptions on every feature, please start with the **Quick Function Reference** section on page 30, and select the function that you wish to perform.

DV-100 Menu Tree

The following diagram illustrates the entire DV-100 menu tree. Please use this diagram for reference as you learn how to operate the system.

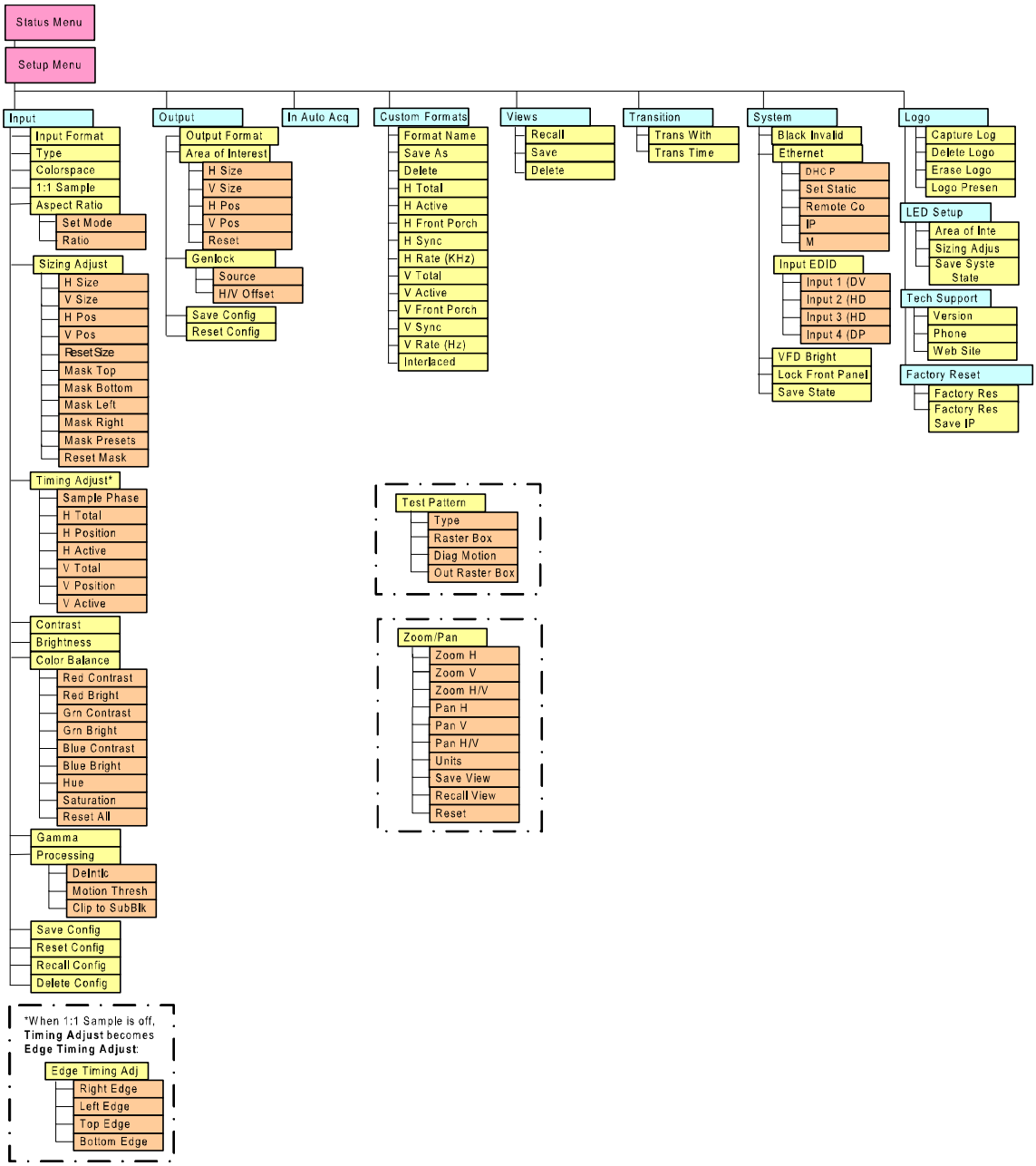


Figure 4-4. DV-100 Menu Tree

Using the Menu System

This section describes the conventions for using the DV-100's menu system. For reference, the following illustration shows the **Setup Menu**.

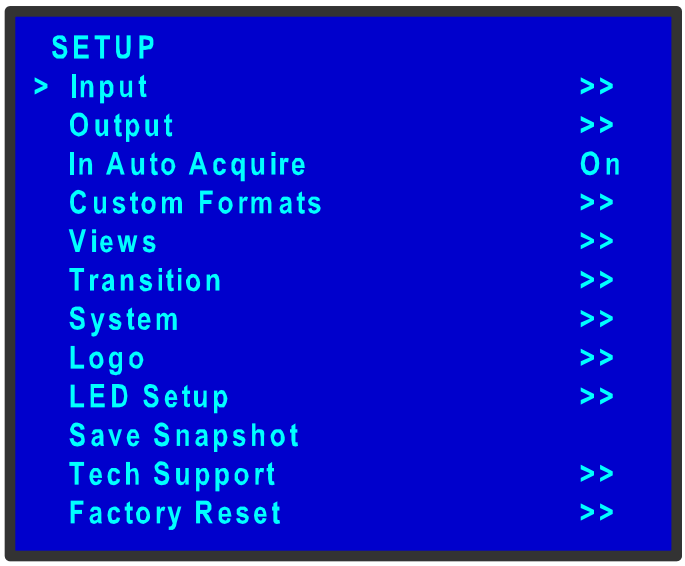


Figure 4-5. Setup Menu

Note

The DV-100's display screen is four lines high. Throughout this chapter, entire menus are shown for ease of reference, unless otherwise noted.

Please note the following important menu rules and conventions:

- The top line names the current menu, in upper-case letters.
- Subsequent lines typically display two fields:
  - ~ For a **function**, the left-hand field names the function. The right-hand field shows the function's current parameter (or value). In the preceding illustration, **In Auto Acquire** is a function and **On** is its current value.
  - ~ For a **submenu**, the left-hand field names the submenu that you can access. The right-hand field displays a double arrow (**>>**), indicating that a submenu is available.

    In the preceding illustration, **Input** and **Output** are two of the available submenus. To use a submenu, scroll to it and press **SEL**. Then scroll through the list that appears.
- The **navigation cursor** (**>**) in the left-hand column indicates the current line on which you can take action. This arrow moves as you rotate the **ADJUST** knob on the front panel. When you reach an editable field and press **SEL**, the navigation cursor changes to an **edit cursor** (#)

Making a Menu Selection

To select a menu item, use the **ADJUST** knob to scroll to the item, then press the **SEL** button on the front panel:

- To scroll through a menu:
  - ~ Turn the **ADJUST** knob counter-clockwise to scroll down.
  - ~ Turn the **ADJUST** knob clockwise to scroll up.
- To open a submenu, scroll to the submenu line and press **SEL**.

Note

Throughout this user's guide, the term "**select**" is used as an abbreviation for "scroll to a menu line and press **SEL**."

▲ **Example:** Select the **Input** menu to begin configuring inputs.

- To change a parameter, scroll to the desired line and press **SEL**. The navigation cursor changes to the edit cursor. Use the **ADJUST** knob to modify the value:
  - ~ Turn the **ADJUST** knob clockwise to increase a value.
  - ~ Turn the **ADJUST** knob counter-clockwise to decrease a value.

  Then press **SEL** to accept a parameter or value. The edit cursor changes back to the navigation cursor.

Note

You must press **SEL** to accept the value.

Exiting a Menu

- In the edit mode (i.e., the edit cursor is visible), press **ESC** to exit a menu without changing the original parameter.
- To navigate back up the menu structure, press **ESC** again. Each press takes you back up the menu tree by one level.

Answering a Menu Query

The **SEL** button is used to answer **Yes** to certain menu queries. The **ESC** button is used to answer **No** to menu queries. The following illustration shows an example of a menu query.

Figure 4-6. Save Input Configuration Query

Quick Function Reference

Use the following table to quickly access information by clicking the hyperlinks to section names or page numbers.

Table 4-1. DV-100 Quick Function Reference Table

To Learn About	Refer to Section	Page
Acquiring a signal	Acquiring an Input Signal	page 55
Adjusting aspect ratio	Setting the Aspect Ratio	page 36
Code upgrades	Appendix B	page 131
Custom input and output formats	Creating Custom Formats	page 57
Deinterlacing	Processing Interlaced and Film Signals	page 43
Detecting a logo	Detecting and Capturing a Logo Using the Logo Menu	page 74
DHCP server queries	Setting Ethernet Options	page 69
EDID settings	Setting the Area of Interest	page 50
Erasing a logo	Erasing a Logo	page 76
Front panel lock	Locking the Front Panel	page 72
Gamma settings	Adjusting Gamma	page 43
Genlock	About Genlock Settings	page 53
DV-100 IP address	Setting Ethernet Options	page 69
Input brightness	Setting Input Contrast and Brightness	page 42
Input color balance	Setting Input Color Balance	page 43
Input contrast	Setting Input Contrast and Brightness	page 42
Input formats	Setting the Input Format	page 34
Input timing	Adjusting Timing Parameters	page 41
Logos	Using a Logo or Internal Black	page 73
Masks	Masking an Image	page 39
Output active area	Setting the Area of Interest	page 50
Output configurations	Saving an Output Configuration	page 54
Output formats	Setting the Output Format	page 50
Pan and Zoom Settings	Creating and Saving Views	page 62
Preset masks	Using Mask Presets	page 39
Quick Image Positioning	Setting up an LED Display	page 78
Raster boxes	Working with Test Patterns	page 54
Restoring factory defaults	Restoring Factory Default Settings	page 80
Sizing an image	Sizing an Image	page 36
Test patterns	Working with Test Patterns	page 54
Transition timing	Setting Transitions	page 67
Views	Creating and Saving Views	page 62

About the Status Menu

The **Status Menu** is the DV-100's top-level menu, which appears by default at system startup. This menu provides input, output, and Genlock information. The following figure illustrates a sample **Status Menu**.

Figure 4-7. Status Menu (sample)

Although the specific information displayed in this menu varies according to the input selected, the **Status Menu** always provides the following details:

- The first line shows the format of the active input in the form Hact x Vact @ vr Hz

  ▲ **Example:** 1920x1080p @ 30 Hz

  If you use a custom configuration for the input, the first line shows the name of your configuration. If the selected input does not detect a valid input signal, the first line displays **Invalid Signal**.

- The second line indicates:

  ~ The Genlock status for the output channel. The options are:

  - **N#** Lock to input number...
  - **N/A** Freerun (default)

  ~ The type of input signal being processed. Options are **CVBS, YC, SDI, RGB, YPbPr, DVI-I, HDMI** and **DP**.

- The third line provides the output format for the available output channel.

  ▲ **Example:** CHA: 1280x1024p @ 60 Hz

About the Setup Menu

The **Setup Menu**, shown in the following illustration, is the menu from which you access all operational menus. To display the **Setup Menu**, press the **SETUP** button on the front panel.

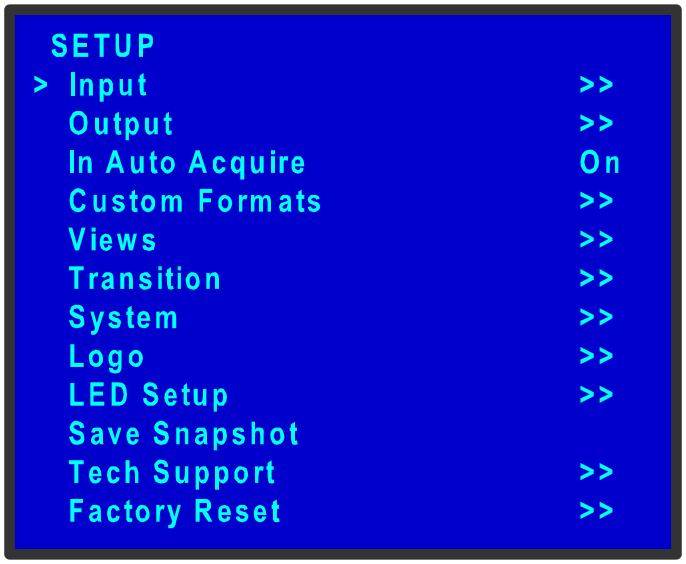


Figure 4-8. Setup Menu

From the **Setup Menu**, you can control most of the DV-100's features. You can also display Technical Support contact information, restore factory default settings, and check for available firmware updates. The following sections describe each **Setup Menu** option in detail.

Configuring Inputs
Configuring Outputs
Acquiring an Input Signal
Creating Custom Formats
Creating and Saving Views
About Transition Effects
Using the System Menu
Using a Logo or Internal Black
Setting up an LED Display
Using the Tech Support Menu
Restoring Factory Default Settings

Configuring Inputs

The **Input Menu** is used to adjust all parameters relating to inputs. Using this menu, you can set all of the configuration options for the selected input.

This section provides detailed information about setting up and using inputs. To quickly position and size video on your LED display, refer to **Setting up an LED Display** on page 78 of this chapter.

Input Menu Tree

The following figure illustrates the **Input Menu** tree.

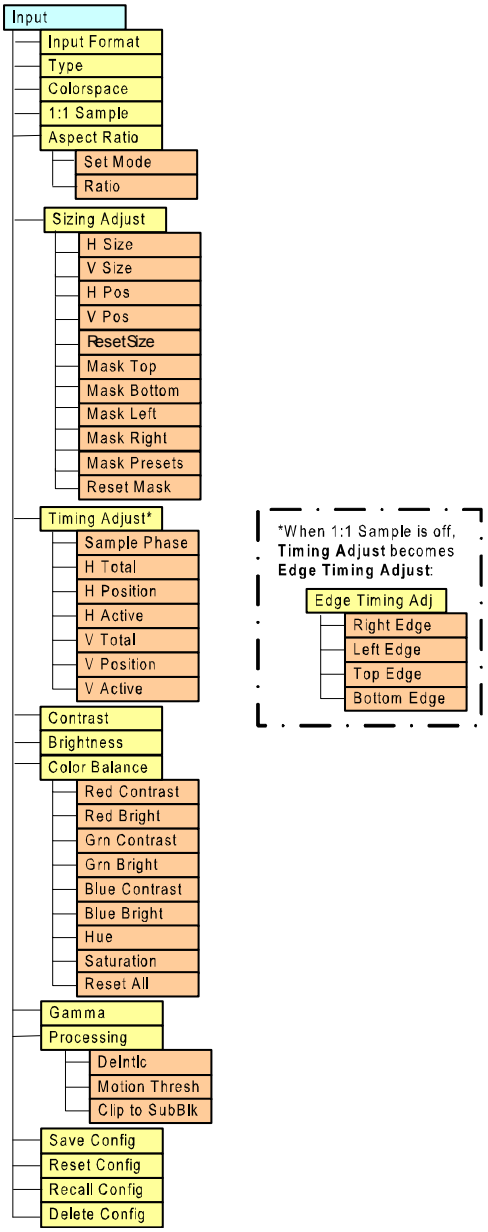


Figure 4-9. Input Menu Tree

Input Menu Functions and Submenus

The following **Input Menu** functions and submenus are covered in this section:

Setting the Input Format
Selecting the Input Type
Selecting the Colorspace
Using 1:1 Sample
Setting the Aspect Ratio
Sizing an Image
Adjusting Timing Parameters
Adjusting Edge Timings
Setting Input Contrast and Brightness
Setting Input Color Balance
Adjusting Gamma
Processing Interlaced and Film Signals
About Input Configurations

Setting the Input Format

The input video **Format** is indicated in the status display and in the **Input Menu**, in the form HactxVact @ vr Hz:

▲ **Example:** 1024x768 @ 75 Hz

When **In Auto Acquire** is **On**, the input video format is detected in the following search order: last used configuration, any saved configurations, custom library formats, standard library formats, or a “best guess” based on the closest video format in the library.

If the video format is a best guess, it is displayed within asterisks:

▲ **Example:** *1024x768 @ 60.11*

If the video format is recalled from a saved input configuration, the format appears with a “c” at the far right:

▲ **Example:** 1024x768 @ 59.94 c

When **In Auto Acquire** is **Off**, the DV-100 attempts to lock to the signal you select. If the format you select does not match the input signal, the display remains black and the status display indicates **Invalid Signal**.

For more information about **In Auto Acquire**, refer to the Acquiring an Input Signal section on page 55.

Selecting the Input Type

Input **Type** defines the type of input connected to the DV-100, such as RGB, DVI-I, or HDMI.

First, select an input. Then, from the **Input Menu**, scroll to **Type** and select a value. Available choices depend on the input you select:

- For **Input 1 (DVI-I)**, the options are RGB, YP_bP_r, YC, CVBS, DVI-I.
- For **Input 2 (HD-15)**, the options are RGB, YP_bP_r, YC, CVBS.
- For **Input 3 (HDMI)**, the option is HDMI.
- For **Input 4 (DisplayPort)**, the option is DP.
- For **Input 5 (SDI-1)**, the option is SDI.

As you change the input **Type**, the default **Colorspace** setting also changes. For example, if you select YP_bP_r or YC, the Colorspace changes to SMPTE. If you select RGB, the Colorspace changes to RGB. For details about these options, refer to **Selecting the Colorspace** on this page.

When you auto-acquire a signal, type selections are limited depending on the input selected. For example, if **Input 3** is connected to an HDMI source, HDMI is the only option for that input and cannot be changed.

When you are not auto-acquiring a signal, you can choose a type for the selected input. If you choose a type that is not applicable to the input, the **Status Menu** displays the **Invalid Signal** message. For information about auto acquisition, refer to **Acquiring an Input Signal** on page 55.

Selecting the Colorspace

The **Colorspace** defines the Composite Video Standard for an input. The options available depend on the selected input and the input **Type**, as shown in the following table.

Table 4-2. Input Colorspace Chart

Input	Input Type	Colorspace Options
1 (DVI-I — Digital)	DVI	RGB or YCbCr
1 (DVI-I — Analog)	CVBS	SMPTE
	Y/C	SMPTE
	YP_bP_r	SMPTE or RGB
	RGB	RGB
2 (HD-15)	CVBS	SMPTE
	Y/C	SMPTE
	YP_bP_r	SMPTE or RGB
	RGB	RGB
3 (HDMI)	HDMI	RGB or YCbCr
4 (DisplayPort)	DP	RGB or YCbCr
5 (SDI-1)	SDI	SMPTE

Using 1:1 Sample

1:1 Sample sets the sampling mode for the selected input. This option is either **On** or **Off**.

You can turn this option **Off** only for RGB and YP_bP_r **analog** inputs. For all other input types, the sampling clock is inherently 1:1.

Image *sampling* occurs when an analog image is digitized, changing the analog signals (Red, Green, and Blue, for example) into pixels stored in the DV-100's image memory. Using 1:1 sampling**,** the DV-100 samples the analog video at exactly the same rate as that of the original signal.

Setting the Aspect Ratio

The input **Aspect Ratio Submenu**, shown in the following illustration, provides one way to affect aspect ratio. The DV-100 selects and displays the input video aspect ratio according to the selected input format.

Figure 4-10. The Aspect Ratio Submenu

The settings on this menu can be overridden by the input horizontal and vertical **Zoom** settings. If you override the settings, this menu may not display the input's actual aspect ratio.

To select the **Aspect Ratio Submenu** from the **Input Menu**, scroll to **Aspect Ratio** and press **SEL**. Then scroll to one of the following options:

- **Set Mode** — The **Set Mode** value is one of the following: **1:1**, **3:2**, **4:30**, **5:4**, **16:9**, **16:10** or **Custom**. The DV-100 detects the input format, and displays the appropriate aspect ratio.
  - **Example:** Computer video at 1280x1024 @ 60 Hz defaults to **5:4**.
  - **Example:** NTSC video defaults to **4:3**.
  - **Example:** HDTV1080i video defaults to **16:9**.
- **Ratio** — This option is available only when **Set Mode** is set to **Custom**. It is a decimal number ranging from **0.750** to **3.000**.

Sizing an Image

The **Sizing Adjust Submenu** lets you:

- Scale the selected input video up (or down) within the current active area.
- Mask (crop) an image, either one edge at a time, or by using preset masks of all four edges to achieve a specific aspect ratio.

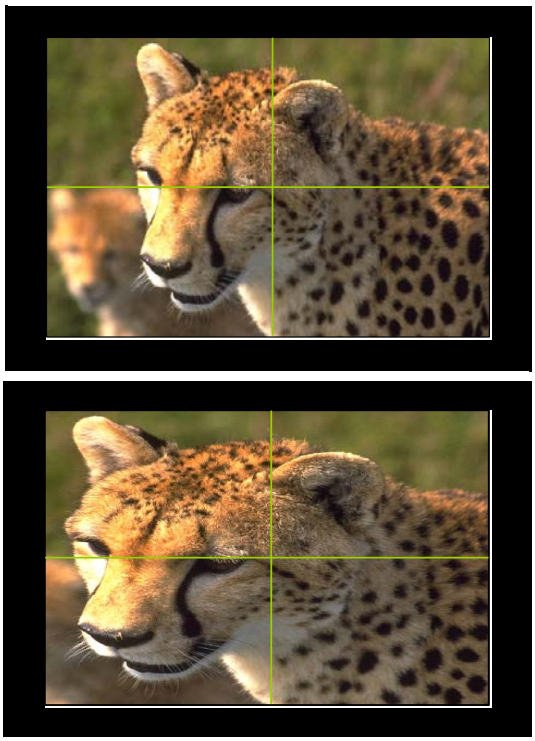
As you adjust sizing, the top and bottom portions of an image may fall outside of the raster, for example, when a 4:3 image is scaled up to 16:9.

Figure 4-11. Sizing Adjust Submenu (sample)

The **Size** and **Pos** functions allow you to size the image, and then position it within the selected aspect ratio.

- Select **H Size** to “stretch” the image across the active area on the horizontal plane. **H Size** is center-based. It adjusts both the left and right edges simultaneously, while the center point of the image remains stable. Values are in pixels. The default value is the input horizontal active pixels. When you resize horizontally, the output “window” is maintained in both size and aspect ratio.

  The following images show a result of horizontal sizing only. In these images, the intersection of the green lines represents the center of the active area. As the image “stretches” horizontally, the center remains exactly the same.



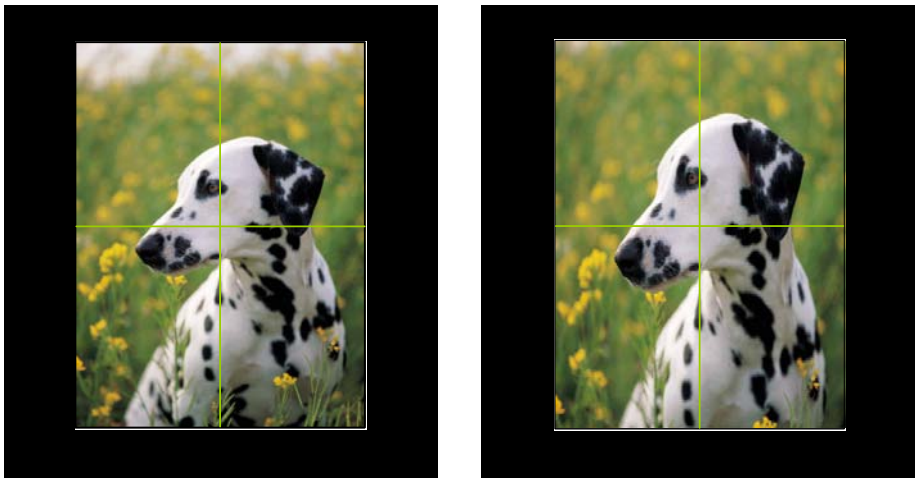
Original image size

Image resized horizontally

Figure 4-12. Horizontal Resizing

- **V Size** is also center-based. Decreasing **V Size** “stretches” the image across the active area, along the vertical plane. This setting adjusts both the top and bottom edges simultaneously, while the center point of the image remains stable. Values are in lines. The default value is the number of the input’s vertical active lines.

  The following images show a result of vertical sizing only. The intersection of the green lines represents the center of the image, which remains stable as the image “stretches” vertically. The output “window” is maintained in both size and aspect ratio.



Original image size

Image resized vertically

Figure 4-13. Vertical Resizing

- Select **H Pos** to pan left or right across the image, to the portion you want to display. Values are in pixels. The **H Pos** value of **0** represents the horizontal center of the active area.
- Select **V Pos** to pan up or down across the image, to the portion you want to display. Values are in lines. The **V Pos** value of **0** represents the vertical center of the active area.
- Select **Reset Size** to undo your changes and restore the image to its previous size.

Masking an Image

Masking an image is cropping a portion of it, typically to remove noise at one or more edges. When a mask is applied on a selected edge, black is displayed in place of the video that is masked. The following illustrations show an image before and after masking the top and bottom edges.

Figure 4-14. Image Before and After Masking

You can mask any of the input's edges individually, or you can use mask presets. The mask presets crop the image to a specific aspect ratio, such as 16:9, 5:4, and so on. To use presets, refer to **Using Mask Presets** on page 39.

- To mask an edge of an image, use the following procedure:

1. Select the input that displays the image you want to adjust.
2. From the **Input Menu**, select **Sizing Adjust**.
3. Scroll down to the edge you want to adjust: **Top**, **Bottom**, **Left**, or **Right**. Press **SEL**.
4. Mask values are given in percentages. Scroll through the values to choose the percent you want to mask from the edge. As you scroll, the output display previews the masking effect.
5. Press **SEL** to confirm your choice.

Note

To restore the original unmasked image, refer to **Resetting Masking Effects** on page 41.

Using Mask Presets

The **Mask Presets** feature on the input **Sizing Adjust Submenu** provides a convenient way to mask all the edges of an image at once, to a preset aspect ratio. The following figure shows the available aspect ratios.

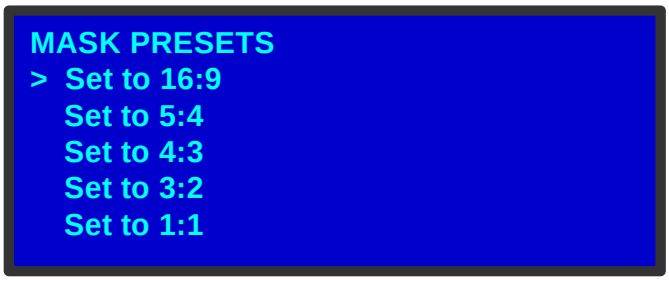


Figure 4-15. Mask Presets Submenu

- Select **Set to 16:9** to mask the image to a 16:9 aspect ratio.
- Select **Set to 5:4** to mask the image to a 5:4 aspect ratio.
- Select **Set to 4:3** to mask the image to a 4:3 aspect ratio.
- Select **Set to 3:2** to mask the image to a 3:2 aspect ratio.
- Select **Set to 1:1** to mask the image to a 1:1 (square) aspect ratio.

As with any mask, presets are additive and are applied to the edges of the image. If you mask a 16:9 image to a 5:4 aspect ratio, the result looks like the lower image in the following illustration.

Figure 4-16. 16:9 Image (top) with 5:4 Masking Preset (bottom)

The image on display is the base image to which the mask is applied. If an image has already been masked to a 5:4 aspect ratio, and you mask it again using the 1:1 preset, the system creates the 1:1 mask using the previous 5:4 image as a base. The result looks like the one in the following illustration.

Figure 4-17. Result of Applying a 1:1 Mask to a 5:4 Masked Image

Resetting Masking Effects

- To restore the original image after masking it, use the following procedure:

  1. Select the input that displays the masked image, if it is not already displayed.
  2. On the **Input Menu**, select **Sizing Adjust**.
  3. Scroll to **Reset Mask** and press **SEL**.

     All masks are removed, including mask presets.

Adjusting Timing Parameters

The DV-100 supports adjusting the positioning of the input signal's active area. There are two timing adjustment menus: **1:1 Timing Adjust** and **Edge Timing Adjust**.

The **1:1 Timing Adjust Submenu** displays the timing information of the input signal, shown in the following illustration. Timing parameters are adjustable only when:

- **1:1 Sample** is **On** *and*
- The input signal is **analog YP_bP_r** or **analog RGB**

Figure 4-18. 1:1 Timing Adjust Submenu (sample)

The options are:

- **Sample Phase** — Initially, the value is set to the default value of **0**. The range is **-16** to **+15**.

If the **Sample Phase** is **n/a**, then either **1:1 Sample** is **Off**, or the input is not analog YP_bP_r or RGB.

- **H Total** — This value is the total pixel count per line. This value cannot be adjusted on the DVI-I or SDI connectors (Inputs **1** and **5**).
- **H Position** — Sets the offset of the start of the active area from H Sync.
- **H Active** — Sets the size of the active area.
- **V Total** — Displays the total line count per frame. This value cannot be changed for any input.
- **V Position** — Sets the offset of the start of the active area from V Sync.
- **V Active** — Sets the size of the active area.

When **1:1 Sample** is **Off**, the **Timing Adjust Submenu** changes to the **Edge Timing Adjust Submenu**. For more information, refer to the **Adjusting Edge Timings** section on this page.

Adjusting Edge Timings

When the **1:1 Sample** option is **Off**, the **Edge Timing Adjust Submenu** is available in place of the **Timing Adjust Submenu**.

Figure 4-19. Edge Timing Adjust Submenu (sample)

Using this menu, you can set the exact locations of the active video edges, when **1:1 Sample** is **Off**. For the right and left edges, the values are in pixels, and the position is relative to the start of H Sync. For the top and bottom edges, the values are in numbers of lines, relative to the start of V Sync.

Because **1:1 Sample** is off, the image is oversampled, and the image quality may be lower than when **1:1 Sample** is turned on.

Note

When making active area adjustments, turn on the **Output Raster Box**, and align the input image with all four edges of the box. To turn on the raster box, refer to the **Working with Test Patterns** section on page 54.

Setting Input Contrast and Brightness

From the **Input Menu**, select **Contrast** to change the contrast of the selected input. Select **Brightness** to change the brightness.

For both **Contrast** and **Brightness**, the adjustment range is in percentages, from **25%** to **150%**. The default setting for both parameters is **100%**. Use the **ADJUST** knob to scroll through the range, and press **SEL** to select a value.

Setting Input Color Balance

From the **Input Menu**, select **Color Balance** to change contrast, brightness, hue, and saturation values for the selected input. The **Input Color Balance Submenu** appears. The values for contrast, brightness, and saturation are in percentages. The values for hue are in degrees.

Figure 4-20. Input Color Balance Submenu

- As with the global **Contrast** and **Brightness** menus, you can adjust both contrast and brightness within a range of **25%** to **150%**. The default setting for both contrast and brightness is **100%**.
- **Hue** is measured in degrees. The range is **-90** to **+90** degrees. The default setting is **0**.
- **Saturation** is a percentage, ranging from **0%** to **150%**. The default setting is **100%**.
- **Reset All** restores all settings to their default values.

Adjusting Gamma

From the **Input Menu**, select **Gamma** to set the input gamma to match the gamma of the source. The adjustment range is from **1.0** to **3.0**, in 0.1 increments. The default value is **1.0**.

Processing Interlaced and Film Signals

The DV-100 supports working with television and film signals in two ways:

- By providing the means to *deinterlace* a non-progressive signal for use on fixed-resolution displays.
  - ~ In **interlaced video**, even lines in a frame are scanned during one field and odd lines are scanned during the next field. This scanning method was used in analog television. *Deinterlacing* is the process of converting the two interlaced fields in a frame to one progressive frame.
  - ~ In **progressive video**, lines in the frame are scanned sequentially. This is the scanning method used for modern digital displays.
- By providing the means to detect and automatically compensate for the 3:2 pulldown sequence used when converting film to video.

These capabilities are found on the **Processing Submenu**. From the **Input Menu**, select

Processing to access this submenu, shown in the following illustration.

Figure 4-21. The Processing Submenu

Note

DeIntlc and **Motion Thresh** options apply to *interlaced video* only.

The options on this submenu are:

- **DeIntlc** — Converts interlaced video to progressive format for processing.

  The DV-100 utilizes an advanced **Motion Adaptive De-interlacing** (MAD) mode to deinterlace most video sources up to HDTV (1920 x 1080i) rates.

  An alternate mode, **Field to Frame** (Fld->Frm), avoids motion artifacts by converting individual input fields to progressive output frames. While vertical resolution is reduced in this mode, video processing delay is also significantly reduced.

  The following table shows the maximum delay for each mode, for both interlaced and progressive video.

Table 4-3. Maximum Video Processing Delay

	DeInterlace Mode	Video Processing Delay (Maximum)	
Synchronous Input/Output		**Interlaced**	**Progressive**
	Motion Adaptive	2 fields	1 field
	Field-to-Frame	1 field	1 field
Asynchronous Input/Output	Motion Adaptive	3 fields	2 fields
	Field-to-Frame	2 fields	2 fields

- **Motion Thresh** — If **DeIntlc** is selected, **Motion Thresh** adjusts the threshold of the motion adaptive de-interlacer. Because adjustment is rarely required, it is recommended that you leave the function at its default setting.
- **Clip to SubBlack** — This function eliminates low-level noise in the black regions of the image. It filters spurious LSBs in low lights under black-level to prevent spurious pixels from appearing in black planes.

About Input Configurations

The DV-100 supports saving up to 64 input configuration files in non-volatile memory, each of which is available to the five physical inputs. Input configuration files contain settings that can govern everything from pixel resolution to aspect ratio and color balance — any setting you can view or change using the **Input Menu**.

By default, an input's configuration file number is the same as the number of the input — **Input 1** is assigned to configuration file number 1, and so on. You can set, delete, recall or save the configuration file for an input. You can associate any number of saved files to any number of inputs.

When you change the configuration file for an input, the timing in the new configuration file must match the input's timing. For example, if the input uses NTSC (720 x 480) timing, that input cannot use a configuration file with a WXGA (1280 X 768) resolution.

When you delete user-defined configuration files, those files are no longer available for use by any input.

For more information about using input configuration files, refer to the following sections:

- **Saving an Input Configuration**
- **Resetting an Input Configuration**
- **Recalling an Input Configuration**
- **Deleting an Input Configuration**

Saving an Input Configuration

After you use the **Input Menu** to change one or more input settings, you can save the changes by selecting **Save Config**. **Save Config** saves up to 64 input configurations in non-volatile memory. You can save the changes to the current configuration file for the selected input, or to a different file.

To save configuration settings, use the following procedure:

1. Select the input you wish to configure, and make adjustments.
2. From the **Input Menu**, select **Save Config**. The **Save Config As Submenu** appears. The cursor is at the **File1** field.

Figure 4-22. Save Config As Submenu

3. Press **SEL**. The navigation cursor changes to the edit cursor. A blank field for the first character becomes available and this field is marked by an underscore.

4. Use the **ADJUST** knob to scroll to the first character you want to use for the format name.

Note

Turning the **ADJUST** knob clockwise once moves to the next letter of the alphabet. If you start with an upper-case letter, as shown in the preceding illustration, then the next letter is also a capital letter. If you start with a lower-case letter, the next letter is a lower-case letter:

- F --> G
- f --> g

If you start with a number, the next character is a number.

Continuing to turn the **ADJUST** knob clockwise at the end of the upper-case alphabet displays a series of punctuation marks you can use in the format name.

Continuing to turn the knob clockwise at the end of the punctuation marks displays the lower-case alphabet in order.

When you reach the end of the lower-case alphabet, turn the **ADJUST** knob counter-clockwise to scroll back through the options in order.

5. Press **SEL**. The cursor moves to the next character field, which is now blank with an underscore.
6. Repeat the previous steps as many times as needed, pressing **SEL** for each character selection.

   A file name can consist of up to 19 alpha-numeric characters.
7. When you have selected all the characters, press **SEL** again to save the name. If you have never used this file name before, the **Config Saved** message appears on the menu, as shown in the following illustration.

Figure 4-23. Config Saved Message

If you have used this file name before, the DV-100 displays the following prompt.

Figure 4-24. Overwrite File Message

If you have used all 64 input configurations, the following message appears.

Figure 4-25. Library Full Message

When you see this message, press **ESC** and go to the **Delete Config Submenu** to delete a different configuration file. Then save the new configuration.

Resetting an Input Configuration

From the **Input Menu**, select **Reset Config** to remove all user-defined configuration settings for the selected input, and restore the input's parameters from the system's internal library values.

When you select **Reset Config**, you are prompted to reset (**SEL**) or continue without resetting (**ESC**).

If the current input format was derived as a "best guess," those best-guess values are restored when you press **SEL**.

Note

Resetting configuration parameters does not change which configuration file is associated with the input — it simply assigns the reset parameters to the existing configuration file.

Recalling an Input Configuration

The **Recall Config Submenu** lets you assign a user-defined configuration to a selected input. The new configuration must match the current input's format and type.

Figure 4-26. Recall Config Submenu

- To recall a configuration for an input, use the following procedure:
  1. Select the input to which you want to assign a configuration.
  2. On the **Input Menu**, select **Recall Config**.
  3. With the navigation cursor pointing to the input file name, press **SEL**. The navigation cursor changes to the edit cursor and a list of files appears.

4. Use the **ADJUST** knob to scroll through the list to the file you wish to recall.

Note	The **Recall Config Submenu** displays only configurations that match the current input format and type.

5. Press **SEL** to select the file.
6. Scroll down to **Recall Config** and press **SEL** again.

Deleting an Input Configuration

From the **Input Menu**, select **Delete Config** to delete a configuration file that you previously saved.

Note	This function deletes a user-defined configuration file from the system. After you delete a configuration file, any inputs using that configuration are restored to their default formats.

The following illustration shows the **Delete Config Submenu**.

Figure 4-27. Delete Config Submenu

- To delete a user-defined input configuration, use the following procedure:
  1. From the **Input Menu**, select **Delete Config**.
  2. With the navigation cursor pointing to the input file name, press **SEL**. The navigation cursor changes to the edit cursor and a list of files appears.
  3. Scroll through the list to the file you wish to delete.
  4. Press **SEL** to select the file.
  5. Scroll down to **Delete Config** and press **SEL** again. A message appears, asking you to confirm the deletion.
  6. Press **SEL** to delete the configuration, or **ESC** to return to the **Delete Config Submenu**.

Configuring Outputs

The **Output Menu** enables you to configure the DV-100's outputs and save your settings if you wish.

This section provides detailed information about setting up and using outputs. To quickly position and size video on your LED display, refer to **Setting up an LED Display** on page 78 of this chapter.

Output Menu Tree

The following figure illustrates the **Output Menu** tree.

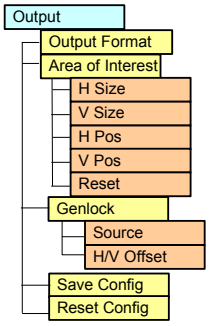


Figure 4-28. Output Menu Tree

Output Menu Functions and Submenus

All **Output Menu** functions and submenus are discussed in the following sections:

Setting the Output Format
Setting the Area of Interest
Setting the Area of Interest
About Genlock Settings
Saving an Output Configuration
Restoring Output Configuration Default Values

Setting the Output Format

The **Output Format** is the first setting on the **Output Menu.** This option sets the frequency rate at which you drive your LED display. When you change the output format, you also change the following settings:

- Genlock and H/V offsets, which reset to **0**
- The default **Area of Interest**, which resets to match the output's active area. For more information, refer to the section Setting the Area of Interest on page 50.

■ To change the output frequency, use the following procedure:

1. On the **Output Menu**, scroll to the format field and press **SEL**.
2. Scroll to the format you want using the **ADJUST** knob, then press **SEL** again. The output is not updated until you press **SEL**.

   To minimize synchronization problems, select a frame rate that is consistent with your input sources.

   ▲ **Example**: If you are using 59.94 NTSC video inputs, running the output at the same rate reduces frame-rate conversion artifacts.

Setting the Area of Interest

The **Area of Interest** (AOI) is the portion of the output display that your video occupies. The DV-100's AOI feature lets you adjust the image to a particular portion of the display, while preserving the video timing and the image quality.

Note

If you use multiple output display devices, the Area of Interest you set applies to all of them.

The Area of Interest is a rectangle relative to the output timing. The default AOI exactly overlaps the output active area. For example:

If the output format is:

1280x1024 @ 60 Hz

the default AOI is **1280 pixels x 1024 lines**.

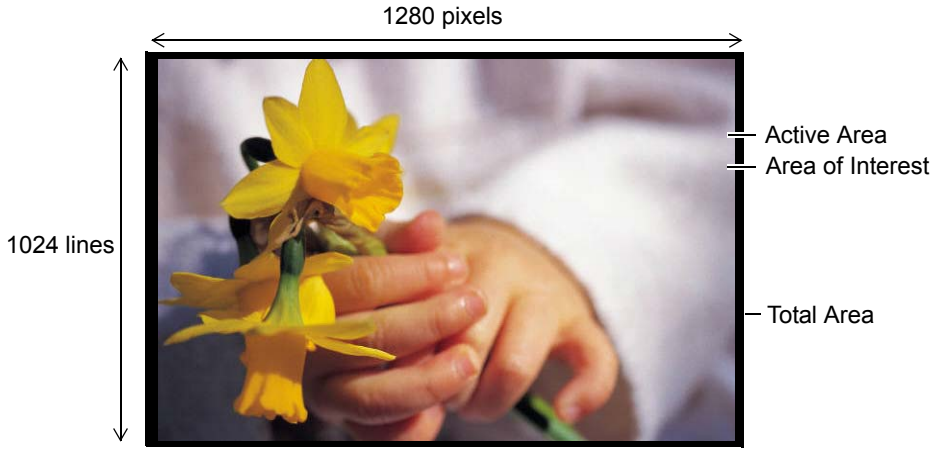


Figure 4-29. Default Area of Interest

The Area of Interest settings adjust the position of the image on your display device without affecting the output timing. In the following illustration, the active area has been adjusted from 1280x1024 to 640x400.

Figure 4-30. Adjusted Area of Interest

To adjust the Area of Interest, you use four settings on the **Area of Interest Submenu**, shown in the following illustration. You can also restore the default AOI.

Figure 4-31. Area of Interest Submenu (sample)

- **H Size** — Determines the width (in pixels) of the Area of Interest. This setting must be equal to or less than the **H Active** setting of the output timing. The following illustration shows an image after adjusting only the **H Size**.

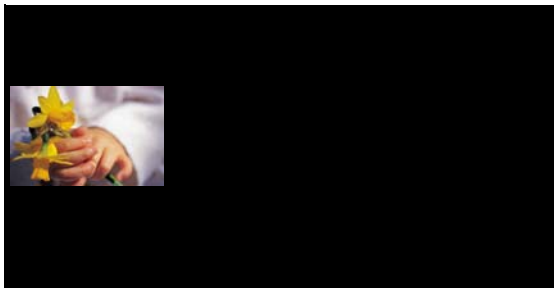


Figure 4-32. H Size Adjustment

- **V Size** — Determines the height (in lines) of the Area of Interest. This setting must be equal to or less than the **V Active** setting of the output timing. The following illustration shows an image after adjusting only the **V Size**.

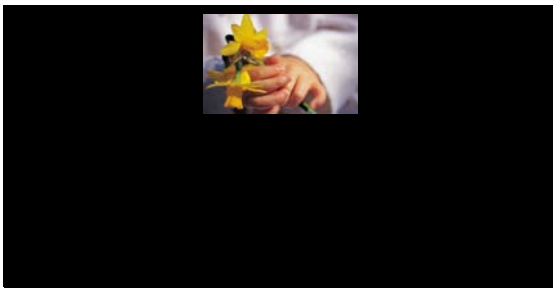


Figure 4-33. V Size Adjustment

- **H Pos** — Using **H Pos**, you can move the image horizontally. The default value is **0**, representing the left edge of the active area. Increasing the **H Pos** value moves the image to the right. Decreasing the **H Pos** value moves the image to the left. You can adjust **H Pos** only after adjusting **H Size**.

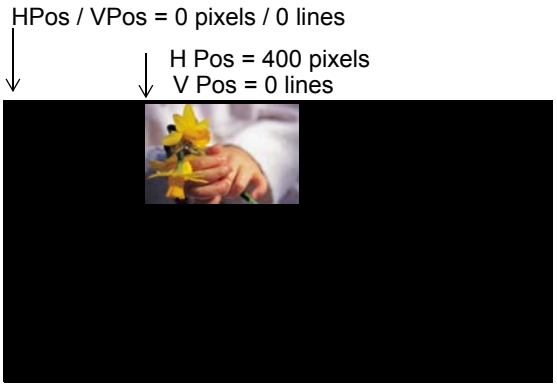


Figure 4-34. H Pos Adjustment from 0 to 400 pixels

- **V Pos** — After adjusting the **V Size**, you can move the image vertically within the output's active vertical limits.The default value is **0**, representing the upper edge of the active area. Increasing the **V Pos** value moves the image down. Decreasing the **V Pos** value moves the image up.

Figure 4-35. V Pos Adjustment from 0 to 200 lines

- To set or revert the output Area of Interest, use the following procedure:

1. From the **Output Menu**, select **Area of Interest**. The **Area of Interest Submenu** appears, showing default settings equal to the H and V actives of the output timing.
2. To change the horizontal size of the AOI, select **H Size** and turn the **ADJUST** knob counter-clockwise. Press **SEL** when the image is placed correctly.
3. To change the vertical size of the AOI, select **V Size** and turn the **ADJUST** knob counter-clockwise. Press **SEL** when the image is placed correctly.
4. To change the horizontal position of the AOI, select **H Pos** and turn the turn the **ADJUST** knob counter-clockwise. Press **SEL** when the image is placed correctly.
5. To change the vertical position of the AOI, select **V Pos** and turn the **ADJUST** knob counter-clockwise. Press **SEL** when the image is placed correctly.
6. To revert *all* your changes to their default settings, select **Reset**.

About Genlock Settings

The **Genlock Submenu** tells the DV-100 which signal to lock on, when you want to synchronize to a source signal. The following illustration shows the options on the **Genlock Submenu**.

Figure 4-36. Genlock Submenu

The **Genlock Submenu** options are:

- **Source** — This option selects the Genlock source from the following values: **Freerun** or an **Input** source.
- **H/V Offset** — This option sets the Horizontal and Vertical offsets separately. When you select this option, the **Genlock Offset Submenu** appears, and provides the following options:
  - ~ **H Offset** — Sets the horizontal offsets, in increments of a **pixel** up to +/- one-half **line**. The range depends on the output format.

~ **V Offset** — Sets the vertical offsets, in increments of a **line** up to +/- one-half **frame**. The range depends on the output format.

- **Status** — The current status.

Saving an Output Configuration

To save the custom output configuration of the selected output, select **Save Config** from the **Output Menu**. The settings are saved in non-volatile memory, and the save persists across power cycles.

Note

Output settings revert to the last **saved** state when you power up the DV-100. If you do not save your settings, they are not restored.

Restoring Output Configuration Default Values

To remove user-defined configuration settings and restore the default values for the current output, select **Reset Config** from the **Output Menu**. If you select this command, custom configurations are not restored the next time you power up the DV-100.

Working with Test Patterns

As you configure outputs, you can set up test patterns. You can send one test pattern to all outputs simultaneously.

Test patterns appear within the output's Area of Interest (AOI). If the output image uses the default AOI, the test pattern is displayed in the default active area. If you set up a custom AOI for the output, the test pattern appears within that AOI. For more information, refer to the **Setting the Area of Interest** on page 50.

You can also set up raster boxes for both the AOI and the output active area.

Setting Up a Test Pattern

- To set up a test pattern on an output, use the following procedure:

1. Press the **TEST PAT** button. The **Test Pattern Menu** appears, as shown in the following illustration.

Figure 4-37. Test Pattern Menu

The first three options on this menu support setting up the test pattern in the default active area and creating an optional raster box around it. The fourth

choice, **AOI Raster Box**, lets you display a raster around the Area of Interest, when that area differs from the default active area.

2. To turn on a test pattern, select **Type**. The choices for this option are:

~ Off (default)	Burst
~ H Ramp	50% Gray
~ V Ramp	Gray Steps 1
~ 100% Color Bars	Gray Steps 2
~ 75% Color Bars	White
~ 16x16 Grid	Black
~ 32x32 Grid	SMPTE Bars

3. Scroll through the list to find the pattern you want, then press **SEL**.
4. **Raster Box** turns on a raster around the default active area. This raster box is a white, single-pixel-wide broken line. **Raster Box** is either **On** or **Off**.
5. Turn **Diag Motion** on or off to create motion for select patterns.
   - ~ The motion is a **bottom-right to top-left diagonal** for 16x16 Grid, 32x32 Grid, Burst, 75% Color Bars, and Gray Steps 1.
   - ~ The motion is **right to left** for 100% Color Bars.
   - ~ The motion is **bottom to top** for Gray Steps 2.
   - ~ There is **no motion** in H Ramp, V Ramp, or Black patterns.
   - ~ The motion is a **strobing effect** for White and 50% Gray.
6. If your Area of Interest is smaller than the output active area, you can select **AOI Raster Box** to create a raster around the AOI. This raster is a green, 1-pixel-wide broken line that helps you to position the AOI within the output's active area. **Out Raster Box** is either **On** or **Off**.

Acquiring an Input Signal

The DV-100 uses the **In Auto Acquire** function on the **Setup Menu** to acquire the input signal automatically. **In Auto Acquire** can be either **On** or **Off**. The default setting is **On**.

When **In Auto Acquire** is **On**, the system performs a full sync acquisition on the input signal whenever:

- You select an input
- The input type changes
- The sync rate of the input signal changes

During acquisition, the system detects and acquires the input type and resolution. Menu selections are limited to those applicable to the detected type.

When **In Auto Acquire** is off, the system uses the last known configuration for each input, when possible. If the input signal is incompatible with the saved configuration, a good input lock may not be possible. In this case, the format name field in the **Status Menu** displays

the **Invalid Signal** message.

Note

Most users can leave **In Auto Acquire** on. Advanced users who know the input video timing parameters may choose to turn **In Auto Acquire** off and select the parameters manually.

Please note the following important points regarding **In Auto Acquire**:

- It is recommended that you turn **Off** **In Auto Acquire** in applications where you have already configured and saved the system's input setup.
- If **In Auto Acquire** is **On** and a valid input is selected that does *not* have a saved input configuration file associated with it, the system attempts to detect and acquire the source. This process *may* take a few moments.
- If **In Auto Acquire** is **Off** the system uses the last-known configuration for each input, to the extent possible, comparing the input's timing to the configurations in the system's library. These configurations can be custom files or system default configurations.
  - ~ If the input timing matches a configuration file, either the timing or the configuration file name appears in the **Status Menu**, and the system displays the image.
  - ~ If the timings do not match, the **Invalid Signal** message appears in the **Status Menu**.

Creating Custom Formats

To access the **Custom Formats Menu**, select **Custom Formats** from the **Setup Menu**. Using the **Custom Formats Menu**, you can create custom video formats from existing formats. When you save a custom or edited format, the DV-100 stores it in a library. During auto-acquisition (i.e., when **In Auto Acquire** is **On**), the system searches this library before it searches the standard system library.

All saved formats are available for any input, and are also available as output formats. To use a saved format, the format must be consistent with the input or output connection you select. You can save up to 32 custom formats.

This section covers the following topics:

- **Custom Formats Menu Tree**
- **Custom Formats Menu Functions and Submenus**

Custom Formats Menu Tree

The following figure shows the **Custom Formats Menu** options.

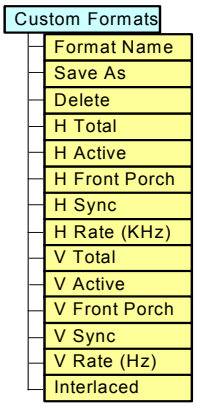


Figure 4-38. Custom Formats Menu Tree

Custom Formats Menu Functions and Submenus

This section covers the following **Custom Formats Menu** topics:

- **Selecting a Custom Format**
- **Creating or Editing a Format**
- **Saving a Custom Format**
- **Deleting a Custom Format**

Selecting a Custom Format

The second line of the **Custom Formats Menu** allows you to select a format for editing. When you select this line, you can scroll to any user-defined format or any standard system format, excluding TV standard formats.

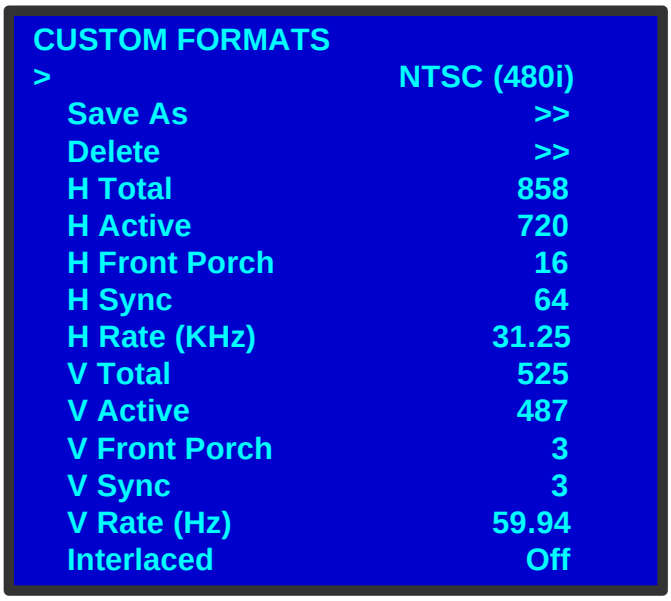


Figure 4-39. Custom Formats Menu

To select a format, use the **ADJUST** knob to scroll through the list. Then press **SEL**.

Creating or Editing a Format

- To create or edit an input or output format, use the following procedure:

1. With the navigation cursor on the second line of the **Custom Formats Menu**, press **SEL**. The navigation cursor changes to an edit cursor.
2. Scroll through the list to the format you want to edit. Press **SEL** again. The format is displayed on the screen and the navigation cursor reappears at the left.
3. Scroll to the first value you want to set. The options are:

H Total	V Active
H Active	V Front Porch
H Front Porch	V Sync
H Sync	V Rate (Hz)
V Total	Interlaced

Note

H Rate (KHz) is displayed for informational purposes. It is not adjustable.

Horizontal values are measured in pixels. **Vertical** values are measured in lines.

The range for any single Horizontal or Vertical value is determined in part by the values of the other parameters. Changing one value does not change the other values, but it limits the available range for other values.

For both Horizontal and Vertical values:

Total = Front Porch + **Sync Width** + **Back Porch** + **Active**

The **Interlaced** option is either **On** or **Off**. When **Interlaced** is **On**, the **V Total** value is forced to an odd number.

When you press **SEL** to select an option in this list, the navigation cursor changes to an edit cursor.

4. Turn the **ADJUST** knob clockwise to increase the value for your option, or counter-clockwise to decrease the value. When you see the value you want, press **SEL**.
5. Repeat the previous two steps for the next value you want to change.

Note

You must save the format in order to ensure that it is available to the system. If you change format values but fail to save the changes, your custom or edited format will not be stored. Refer to the **Saving a Custom Format** section on this page for more information.

Saving a Custom Format

- To save a custom format, use the following procedure:

1. After you have created a custom format, scroll to **Save As** and press **SEL**. The **Save Format As Submenu** appears.

Figure 4-40. Save Format As Submenu

2. With the navigation cursor at the format name field, press **SEL**.

   The navigation cursor changes to the edit cursor, and the first character field is blank with an underscore.
3. Use the **ADJUST** knob to scroll to the first character you want to use for the format name, and press **SEL**. The cursor moves to the next character field, which is now blank with an underscore.
4. Continue until you have selected all the characters. Your format name can have up to 19 characters. Press **SEL** after making your final selection.
5. Press **SEL** again to exit the edit mode. The navigation cursor returns and your format name appears in the display screen.
6. Scroll to **Save** and press **SEL**.

   If your format name has never been used before, the **Format Saved** message appears.

Figure 4-41. Format Saved Message

If the format library is full, the following message appears. Press **ESC**, then decide if you want to delete one of the existing formats to make room in the library.

Figure 4-42. Library Full Message

If you save a new format with a name reserved for a system format, the following message is displayed:

Figure 4-43. Reserved Name Message

In this case, re-edit the format name and save it again.

If you save a format name that is already in your custom library, the following prompt appears:

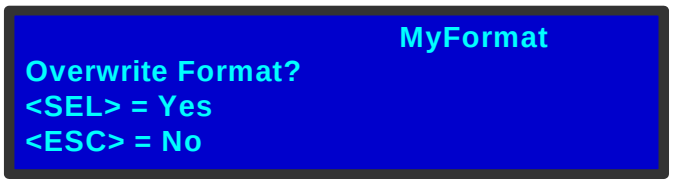


Figure 4-44. Overwrite Format Message

Press **SEL** to save your custom format with the same name. This action overwrites any settings in the original format. Press **ESC** to cancel the save operation.

Deleting a Custom Format

You can delete any custom format from your format library. You cannot delete a system format.

Note

Be sure the format is not in use before you attempt to delete it. You cannot delete a format if it is:

- The current output format, or the output format saved in the current output configuration
- The format used by any of the current inputs, or the input format saved in any input configuration

- To delete a custom format, use the following procedure:

1. On the **Formats Submenu**, scroll to **Delete** and press **SEL**. The **Delete Format Submenu** appears:

Figure 4-45. Delete Format Submenu

2. At the format name line, press **SEL**, and scroll to the file name you want to delete. Press **SEL** again.
3. Scroll down to **Delete** and press **SEL**. A prompt appears, asking you to confirm the deletion.

Figure 4-46. Delete Format Query

4. Press **SEL** to continue with the deletion. Press **ESC** to cancel the deletion.

   If you attempt to delete a format that is in use, the following message appears.

Figure 4-47. 'Delete Format Fail' Message

   If you see this message, and you still want to delete the format, assign a different format to any inputs or outputs using this format, then try again.

Creating and Saving Views

A *view* is a combination of the pan and zoom settings on an input. The **Views Menu** lets you name and store up to 16 custom views, along with the **Default** view. The **Default** view displays the image at **100%** zoom and **0%** pan, filling the screen.

The **Views Menu** works in conjunction with the **PAN/ZOOM** function. To begin creating a view, you first use the **PAN/ZOOM** button to create the settings for the view. For example, you can define a view that maps the entire input image to the center of the output display, or a view that fills the screen with an enlargement of one portion of the image. If you save the view to the current input, the save persists across power cycles for this input only.

You can then switch to the **Views Menu** to save the view in non-volatile memory for use by other inputs. You can later recall any saved view and assign it to any input. And you can delete any user-defined view.

Both the **PAN/ZOOM** button and the **Views Menu** provide the ability to save and recall a view. However, only the **Views Menu** enables you to assign a system name to a view as you save it, to delete a view, and to make the view available to multiple inputs. The sections that follow discuss both menus.

Creating a View

To create a view, use the **PAN/ZOOM** button on the DV-100's front panel. Press this button to display the **Zoom/Pan Submenu**, shown in the following figure.

Figure 4-48. The **Zoom/Pan Submenu** (sample)

On this menu, you can set pan and zoom values in either pixels or percentages. The menu options are:

- **Zoom H** and **Zoom V** define horizontal or vertical zoom settings individually.
- **Zoom H/V** adjusts both horizontal and vertical zoom settings at the same time. Both settings change in increments of 0.1.
- **Pan H** and **Pan V** adjust horizontal and vertical pan settings individually. You can adjust **Pan** settings only after adjusting **Zoom** settings.
- **Units** defines the units you are using. The options are **Pixel** and **Percent**.
- **Fill H/V** adjusts the image to fill the display both horizontally and vertically.

- **Save View** saves the current input's view settings. For more information, refer to **Saving a View to an Input** on page 63.
- **Recall View** recalls a saved view to the current input. For details, refer to **Recalling an Input's Saved View** on page 63.
- **Reset** sets all view settings for the current input to their default values. If you have saved a view for this input, that view remains in memory after you reset, and can be recalled again later.

Saving a View to an Input

On the **Zoom/Pan Submenu**, the **Save View** option saves your view to the current input only. You can save one view for an input. The save persists across power cycles for this input.

If you save the view using this menu, you will not be able to recall it later for use on other inputs. Nor does this option permit naming the view.

■ To save a view to the selected input, use the following procedure:

1. Create the view settings as described in **Creating a View** on page 62. Press **SEL** after each setting you adjust.
2. When you finish adjusting settings, press **SEL**.
3. Scroll to **Save View**, and press **SEL** again.

   A confirmation message appears, and your view is applied to the selected input.

When you have adjusted the pan and zoom settings for the current input, you have the option of saving this view to the system. To name and save a view for future recall, refer to **Saving a View to the System** on page 63.

Recalling an Input's Saved View

■ To recall a view you saved to a specific input, use the following procedure:

1. Select the input and press **PAN/ZOOM**.
2. On the **Zoom/Pan Submenu**, select **Recall View**.

   The image adjusts to the saved view settings.

Note

Using **Recall View** on the **Zoom/Pan Submenu**, you can only recall the single view you saved to the input. If you wish to apply a view that you saved to the system, refer to **Recalling a System View** on page 65.

Resetting an Input's Default View

■ To restore the default view on an input, select **Reset** on the **Zoom/Pan Submenu**.

Saving a View to the System

If you want to save a view you created and make it available to other inputs, you can save it to the system, using the **View Menu**.

- After you create pan and zoom settings for a view, use the following procedure to name the view and save it. For information about pan and zoom settings, refer to **Creating a View** on page 62.

> **Note** This procedure saves the view settings, under the name you select. **It does not assign this view to an input.** To assign a system view to an input, refer to the section **Recalling a System View** on page 65.

1. After creating your view with the **PAN/ZOOM** button, return to the **Setup Menu** and select **Views**. You do not need to save the view in the **Zoom/Pan Submenu** first.

   The **View Submenu** appears, as shown in the following illustration.

Figure 4-49. View Submenu

2. Select **Save**. The **Save View Submenu** appears.

Figure 4-50. Save View Submenu (sample)

3. Select **View** to choose a name for your view. You can choose from a list of 16 preset names by turning the **ADJUST** knob. Then press **SEL**.
4. Scroll to **Save** and press **SEL** again. Your view settings are saved, and a confirmation message appears.

Figure 4-51. View Saved Message

Recalling a System View

The **Recall View Submenu** lets you apply a saved system view to the selected input. You can recall any previously saved system view.

Note

Recalling *applies* the selected view to the input, but does not *save* the view to the input. To save the view across power cycles, refer to **Saving a View to an Input** on page 63.

- Use the following procedure to apply a view to the current input:

1. Select the input to which you want to assign a view.
2. On the **Views Menu**, select **Recall**. The **Recall View Submenu** appears.

Figure 4-52. Recall View Submenu (sample)

3. At the **View** field, press **SEL**. Scroll to the name of the view that you want to apply to the selected input. Press **SEL** again.
4. Scroll to **Recall** and press **SEL**. The view is assigned to the selected input. This view will be used for this input until you change it or power down the system. When you power down the system, the input's settings return to their previous values.

Deleting a View from the System

You can delete any custom views from the system. When you delete a view, you return the system default settings to the named view. You cannot delete the system name for a view. You cannot delete the default view for an input.

- Use the following procedure to delete a view from the system:

1. Select **Views** from the **Setup Menu**.
2. On the **Views Menu**, select **Delete**. The **Delete View Submenu** appears.

Figure 4-53. Delete View Submenu (sample)

3. Select **View**.
4. Select the name of the view that you want to delete.
5. Scroll to **Delete** and press **SEL**.

A confirmation message appears. The custom settings assigned to the view are deleted, and the view is restored to its default values. The preset name of the view remains in the system.

About Transition Effects

The DV-100 supports three transition effects that occur when you switch between inputs:

- **Black Fade** — The selected input's video fades to black, then the video transitions to a new input, in a pre-selected timeframe.
- **Image Cut** — The selected input's video freezes, then the new input's video is acquired and cuts to the output display.
- **Logo** — This option is only available when the DV-100 has a stored logo image. The selected input's video dissolves to the logo image, then the new input's video dissolves in from the logo, in a pre-selected timeframe.

  For information about capturing a logo, refer to **Using a Logo or Internal Black** on page 73.

For the **Black Fade** and **Logo** modes, you can set the transition time within a range of **1.0** to **5.0** seconds.

These timings apply only when **In Auto Acquire** is turned **Off**. With **In Auto Acquire** turned **On**, the transition time is slightly greater because of the time required to analyze the input video timing.

The following figure shows the transition from a video to a logo still frame.

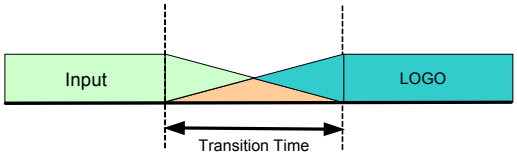


Figure 4-54. Transitioning to a Logo

The following figure shows the transition from one video through a logo to a second video.

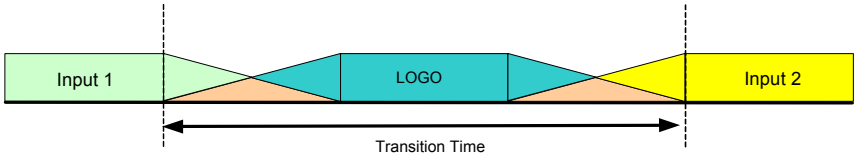


Figure 4-55. Transitioning through a Logo to a Second Input

There are two options on the **Transition Menu**, as shown in the following figure. The first sets the transition *type*, and the second sets the *timing* of the transition for **Black Fade** and **Logo** transitions.

Figure 4-56. Transition Menu

Setting Transitions

- To set the transition type and timing, use the following procedure:

  1. Select the input you want to transition *from*.
  2. From the **Setup Menu**, select **Transition**. The **Transition Menu** appears.
  3. Set the transition mode by selecting **Trans With,** and scrolling to the type you want. Press **SEL**.

     If you selected **Black Fade** or **Logo**, you can now set the transition time. If you selected **Image Cut**, you are finished.
  4. For the **Black Fade** and **Logo** modes, scroll to **Trans Time** and press **SEL**.
  5. Select a new transition time and press **SEL** again.

     Your settings are saved for this input.

Using the System Menu

The **System Menu** enables you to configure certain system-wide settings for the DV-100. To access the menu, select **System** from the **Setup Menu**.

The following topics are discussed in this section:

- **The System Menu Tree**
- **System Menu Functions and Submenus**

The System Menu Tree

The following figure illustrates the **System Menu** tree.

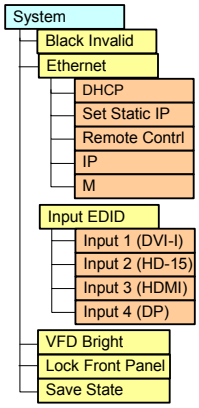


Figure 4-57. System Menu Tree

System Menu Functions and Submenus

System Menu functions allow you to view and change settings such as input EDID information, and Ethernet options, and save your changes. You can also save configurations and formats to a flash drive, and restore them from the drive later.

This section includes the following topics:

- Setting Black Invalid
- Setting Ethernet Options
- Changing Input EDID
- Setting Display Brightness
- Locking the Front Panel
- Saving System State

Setting Black Invalid

The **Black Invalid** system setting determines whether the output is black when connected to a signal it cannot process. **Black Invalid** is either **On** or **Off**. The default setting is **On**. This is a global setting, applicable to all outputs.

Setting Ethernet Options

Using the **Ethernet Submenu**, shown in the following illustration, you can view and change certain Ethernet settings.

Figure 4-58. Ethernet Submenu (sample)

For example, you can:

- Query the DHCP server for a valid IP address, or turn off this feature.
- Set a static IP address for the DV-100, along with a subnet mask and gateway. This feature is available only if **DHCP** is turned **Off**.
- View the DV-100's IP address.

  If there is no internet connection, or if a DHCP server has not been found, the IP address is 000.000.000.000. In this case, the DV-100 ignores the Ethernet port.
- View the Media Access Control (MAC) address of the DV-100's Ethernet port.

Querying the DHCP Server

In the **Ethernet Submenu**, the default setting for **DHCP** is **On**. When **DHCP** is turned on, the DV-100 automatically queries the DHCP server for a valid IP address. If the DV-100

receives an IP address, that address is displayed in the **Ethernet Submenu**.

Note

It can take several seconds to obtain an address from the server. During this time, the **SEL** button remains lit.

When **DHCP** is off, you can manually enter a static IP address, along with a subnet mask and gateway, in the **Set Static IP Submenu**. Consult your network administrator for a valid IP address, subnet mask and gateway.

Setting a Static IP Address

When a DHCP server is not available, you can set the DV-100's IP address, using the **Set IP Submenu** shown in the following illustration.

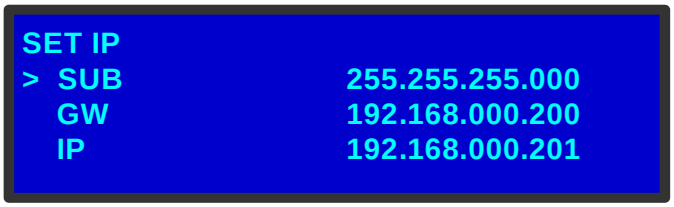


Figure 4-59. Set IP Submenu (sample)

- To set a static IP address for the DV-100, use the following procedure:

1. Ensure that the **DHCP** setting is **Off**.
2. From your network administrator, obtain a valid IP address, including subnet and gateway.
3. On the **Ethernet Submenu**, select **Set Static IP**.
4. On the **Set IP Submenu**, select **SUB**(net). The last character in the first field becomes available, as indicated by the empty field and an underscore.

   You must change the **SUB** parameter before editing either of the other parameters.
5. Turn the **ADJUST** knob to change the first value. As you continue turning the knob, you can change all three values in this field. Values range from **000** to **255** in all four fields.
6. Press **SEL** to accept your change in the first field. The last character in the next field becomes available.
7. Continue until you have created the subnet value you want. Press **SEL**.
8. Make similar changes in the **GW** and **IP** fields.
9. Press **SEL** to accept your final change.

Note

If you press **ESC** at any time before accepting your final change, all your edits will be removed, and the original values restored.

Accessing the DV-100 Remotely

- After you have set up the Ethernet options as described in **Querying the DHCP Server** and **Setting a Static IP Address** on page 69, use the following procedure to set up the DV-100:

  1. On a PC, laptop, or mobile device with the Microsoft Windows OS, open a command prompt window.
  2. Type the IP address and port on the prompt, using the following format:

     > telnet xxx.xxx.xxx.xxx 10001

     where the x's represent the DV-100 IP address, and 10001 is the port.

     After Ethernet communication is established, the telnet window functions in the same fashion as a serial COM port communication.
  3. Verify with the network administrator that the DV-100 can communicate with the computer.

Changing Input EDID

The DV-100's EDID information is stored in non-volatile memory. This file contains the preferred and allowed resolutions for each EDID-capable input in the DV-100. An external device's graphics card reads this file when the device is connected to an DV-100 input. The DV-100 does not have to be powered up while the file is being read.

You can change the **preferred** resolutions for the DVI-I, HD-15, HDMI, and DisplayPort input connectors. You cannot change the **allowed** resolutions for these inputs.

- To change the EDID preferred resolution for an input, use the following procedure:

  1. On the **System Menu**, select **Input EDID**. The **Input EDID Submenu** appears.

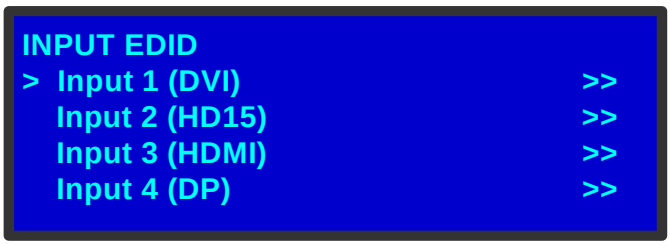


Figure 4-60. Input EDID Submenu

  2. Select an input option. The following menu appears:

Figure 4-61. EDID Input Format Submenu

On this submenu, the input you selected is shown in the upper right corner. On the next line is the current format for this input. On the third line, you can select and change this format.

3. The third line defaults to the current format. Press **SEL** and use the **ADJUST** knob to scroll through a list of available input formats, and press **SEL** again.
4. Scroll to **Program EDID**. This option lets you set your new format as the preferred resolution for the current input.

Note	Unless you use **Program EDID**, the new resolution will not be stored as the preferred resolution.

5. Press **SEL**. The following message appears. Press **ESC** to continue.

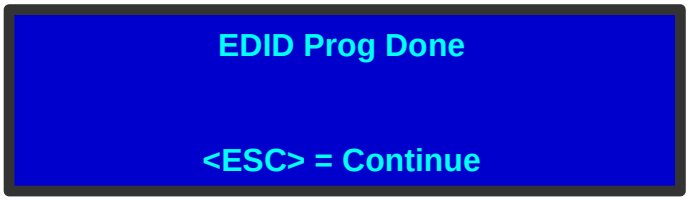


Figure 4-62. EDID Confirmation Message

Setting Display Brightness

The **VFD Brightness Submenu** adjust the intensity of the front panel vacuum fluorescent display (VFD) screen. The adjustment range is **+0** to **+6**, with **+6** being the brightest. The default setting is **+3**.

Note	Using a low intensity is advisable, to avoid “burn-in” of the display screen.

Locking the Front Panel

When the DV-100’s front panel is locked, button presses have no effect. In the locked mode:

- All button presses and all turns of the **ADJUST** knob are ignored.
- All Ethernet and serial communications commands function normally.
- All button lights continue to reflect the correct state of the inputs.

To enable and disable the front-panel lock, use the following procedure:

1. On the **System Menu**, scroll to **Lock Front Panel** and press **SEL**.

   The front panel is locked, and the following message appears.

Figure 4-63. Front Panel Locked Message

2. To disable the front panel lock, press and hold the **SEL** and **ESC** buttons simultaneously for 3 seconds. When the panel is unlocked, the display screen displays the **Status Menu**.

Saving System State

Save System State on the **System Menu** saves your custom configuration parameters in non-volatile memory, including:

- The currently selected input channel

Note To save the configurations of all inputs, refer to **Setting up an LED Display** on page 78 of this chapter

- The output configuration
- System settings such as Black Invalid, Input EDID information, and display brightness

If you save the system state, these parameters are restored the next time you power up the DV-100. If you *do not* use this function, your custom settings are not restored during the next system power up sequence.

Using a Logo or Internal Black

The DV-100 supports capturing and storing one full-screen image called a *logo*, which can be displayed during transitions. Typically, the logo is a corporate logo, but it can be any still image captured from an DV-100, up to a maximum resolution of **1280x1024**. You can capture the logo from the active video input, or upload an image using the DV-100's Web Interface. The logo appears on top of all other sources when you transition to it.

You cannot scale the logo. If the logo is of higher resolution than the current output format, the image appears cropped. If the logo is of lower resolution than the current output format, the entire logo appears in the center of the output display. For examples, refer to **Displaying a Logo** on page 75 of this chapter.

You can also set up an input to transition to internal black instead of a logo. For information about transitioning to and from a logo or black, refer to **Setting Transitions** on page 67 of this chapter.

The DV-100 provides the following ways to work with logos and internal black:

- The **LOGO** and **BLACK** buttons on the front panel
- The **Logo Menu**

This section discusses both methods of capturing, deleting, and restoring a logo or internal black.

In addition to these methods, you can also downloading or restore a logo from the DV-100 Web Interface. For details, refer to **Backing Up and Restoring Data with the Web Interface**, on page 86 of Chapter 5.

Please note the following important points regarding the logo:

- After you save a logo, the image remains in memory across power cycles.
- You can de-select the logo on display by pressing one of the input buttons or **BLACK**.

- When the **LOGO** or **BLACK** button is selected, the **PAN/ZOOM** button is not operational.
- When you power up an DV-100 that has a stored logo, the **LOGO** button is dimmed.
- When the DV-100 has no stored logo, the output displays black during transitions.
- You can overwrite a stored logo by capturing a new image.
- If you perform a factory reset, the logo is cleared from memory and cannot be retrieved.

About the LOGO Button

The **LOGO** button states are:

- When selected, the **LOGO** button is **lit**.
- If the DV-100 has a stored logo, the **LOGO** button is **backlit** when you power up the system.
- When there is no stored logo, the **LOGO** button is **not lit** when you power up.

Capturing a Logo Using the LOGO Button

- To capture a logo using the **LOGO** button, use the following procedure:

1. Press and hold an input button.
2. Press **LOGO**.

   The system captures the frame from the selected input, and stores the frame in non-volatile memory. While the capture is in progress:

   ~ A progress bar and related messages are shown on the display screen.

   ~ The input button is backlit, and the **LOGO** button is lit.

Detecting and Capturing a Logo Using the Logo Menu

The **Logo Menu**, shown in the following illustration, enables you to capture the source for the **LOGO** button. You can also determine whether a logo is stored in the system, and delete or erase the logo, using this menu.

Figure 4-64. Logo Menu

To access the menu, select **Logo** from the **Setup Menu**. The following functions are provided:

- **Capture Logo** — Scroll to the **Capture Logo** function and press **SEL** to save the current active image as the logo.

- **Delete Logo** — Scroll to the **Delete Logo** function and press **SEL** to delete the current logo without removing it completely from memory. If you delete the logo, the **LOGO** button displays a black frame the next time you press it. To completely remove the logo from memory, use **Erase Logo** on this menu**.**
- **Erase Logo** — Completely removes the logo from memory. When security is an issue, use this option.

Note

The **Capture Logo, Delete Logo,** and **Erase Logo** functions are not available (**n/a**) when the **LOGO** button is selected.

- **Logo Present** — Indicates whether a logo is stored in memory.

To capture a logo using the **Logo Menu**:

1. Select an input.
2. From the **Setup Menu**, select **Logo**.
3. On the **Logo Menu**, select **Capture**.

Displaying a Logo

After capturing a logo, you can display it by pressing **LOGO**. The logo transitions to the output, using the timings you create in **Setting Transitions** on page 67.

When the logo is displayed:

- The **PAN/ZOOM** button and the **Input Menu** are not available.
- The **Status Menu** indicates **LOGO** as the input format and shows the resolution of the captured logo.

  If, after capturing a logo, you change the output format, and the logo format is higher resolution than the output format, the logo appears to be cropped.

Original logo format

Logo in lower resolution output

Figure 4-65. Logo Image in Two Different Output Formats

If the logo format is lower resolution than the new output format, the entire logo appears within the output active area and black bars are placed at the edges as necessary.

Figure 4-66. Logo Image at Lower Resolution than Output Format

To take a logo off display, but keep it in memory, select another input.

Deleting a Logo

Deleting a logo means making it unavailable for use, but not completely removing it from system memory.

Note

When data security is an issue, it is advisable to erase the logo rather than delete it. For information, refer to **Erasing a Logo** on page 76.

- To make a logo unavailable for use, use the following procedure:
  1. Select **Logo** from the **Setup Menu**.
  2. On the **Logo Menu**, select **Delete Logo**.

Note

You can also delete a logo by overwriting it with another image, or by performing a **Factory Reset**.

Erasing a Logo

Erasing a logo means completely removing it from system memory.

Before returning an DV-100 from an event, it is advisable to use this procedure when the security of your data is critical.

- To erase a logo, use the following procedure:
  1. Select **Logo** from the **Setup Menu**.
  2. On the **Logo Menu**, select **Erase Logo**.

Displaying Internal Black

The **BLACK** button on the front panel displays a black frame on the output device. The

black frame transitions to the output, using the timings you created in **Setting Transitions** on page 67. If you did not create transition timings and effects, you can do so before you begin.

When the display transitions to black:

- The **BLACK** button is lit and the input button is backlit.
- The **Status Menu** indicates **Internal Black** as the input format.
- The **PAN/ZOOM** button and the **Input Menu** are not available.

To restore video to the display, press the input button again.

Setting up an LED Display

The **LED Setup Submenu,** shown in the following illustration, provides a quick way to position the video image on your LED display. Select **Setup** > **LED Setup** to view this menu.

Figure 4-67. LED Setup Menu

To set up the wall, you define the Area of Interest and size the image within that area. Then you can save your settings or restore the default values.

On this menu:

- **Wall Sizing** (**AOI)** displays the **Area of Interest Submenu** described in **Setting the Area of Interest** on page 50 of this chapter.
- **Image Sizing** displays the following **Zoom/Pan Submenu**, which provides options in addition to those that appear when you press the **PAN/ZOOM** button.

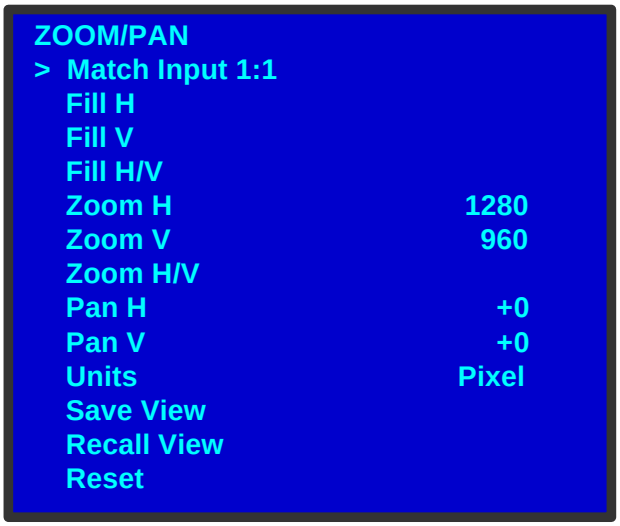


Figure 4-68. Zoom/Pan Menu (LED Setup Submenu)

This **Zoom/Pan Menu** provides the following options:

~ **Match Input 1:1** fills the Area of Interest with the **unscaled** input image. If you created an Area of Interest that is smaller than the default active area for the input, a portion of the image is not displayed. You can then use the Pan settings to display the portion of the image you want to show on the wall.

~ **Fill H** fills the active area to the left and right edges.

~ **Fill V** fills the active area to the top and bottom edges.

- ~ **Fill H/V** fills the entire active area with the **scaled** image.
- ~ **Zoom H** zooms in or out on the horizontal center of the image. Increasing this setting “stretches” the image to the right and left along the horizontal plane. Decreasing this setting brings the right and left edges in toward the center of the active area.
- ~ **Zoom V** zooms in or out on the vertical center of the image. Increasing this setting “stretches” the image up and down along the vertical plane. Decreasing this setting brings the top and bottom edges in toward the center of the active area.
- ~ **Zoom H/V** zooms in or out both horizontally and vertically.
- ~ **Pan H** moves the image to the right or left on the wall.
- ~ **Pan V** moves the image up or down on the wall.
- ~ **Units** applies to the Pan and Zoom settings. The choices are **Pixel** and **Percent**. The default setting is **Pixel**.
- ~ **Save View** provides the opportunity to save your settings. You can save one view for each input. When you select this option, a prompt appears. Press **SEL** to save the view or **ESC** to cancel.
- ~ **Recall View** restores the last saved view.
- ~ **Reset** restores the default settings.

For additional information about creating and saving views, refer to **Creating a View** on page 62 of this chapter.

- Selecting **Save Snapshot** saves the following settings:
  - ~ All **System Menu** changes
  - ~ All **Output Menu** changes
  - ~ All **Input Menu** changes for all input channels

Using the Tech Support Menu

The **Tech Support Menu**, shown in the following illustration, provides quick access to Customer Support contact information, and also shows you the software version for your DV-100.

Figure 4-69. Tech Support Menu

This menu displays:

- The software version your DV-100 uses. This number changes when you update system software. Refer to Appendix B, **Upgrading Firmware,** on page 131 for software upgrade instructions.

- The Customer Support telephone number. This number is accessible from 6 a.m. to 10 p.m. (PST), 7 days per week.
- The Customer Support web site address.

Restoring Factory Default Settings

Two options in the **Setup Menu** allow you to restore the DV-100 to its factory default condition. The following attributes constitute a factory default condition:

- The **Status Menu** is shown in the display screen.
- **Input 1** is powered on.
- All other menu buttons and effects buttons are off.
- The Area of Interest is the default active area for each output.
- There is no logo stored in memory. If you saved a logo, the logo is deleted.
- All custom configurations, views, and formats are deleted.

The **Factory Reset Menu** provides two options for restoring factory default settings:

- **Factory Reset** — If you use this option, *all* of your custom input, output, and system configuration files are deleted. All custom views and formats are deleted. If you have a stored logo, it is deleted.
- **Factory Reset, Save IP** — This option performs a factory reset, but retains the IP address of the DV-100.

Note

It is advisable to clear all saved configurations when you use the DV-100 for the first time, or when returning an DV-100 from an event.

Restoring All Factory Settings

- To restore all default settings to the DV-100, use the following procedure:

1. Select **Factory Reset** from the **Setup Menu**. The **Factory Reset Menu** appears.
2. Select **Factory Reset**. A prompt appears, asking if you want to clear all configurations, formats, and views.
3. Press **SEL**. The system turns off, then reboots.

   If you press **ESC** to cancel the operation instead, your custom settings remain in place and you are returned to the **Factory Reset Menu**.

Retaining the IP Address When Restoring Factory Settings

- To restore default settings to the DV-100 but retain the unit's IP address, use the following procedure:

1. Select **Factory Reset** from the **Setup Menu**. The **Factory Reset Menu** appears.
2. Select **Factory Reset, Save IP**. A prompt appears, asking if you want to clear all configurations, formats, and views.

3. Press **SEL** to reset the system but save the IP address. The system turns off, then reboots.

   If you press **ESC** to cancel the operation instead, your custom settings remain in place and you are returned to the **Factory Reset Menu**.

5. Web Remote Control Operations

In This Chapter

This chapter includes information about backing up and restoring data using the DV-100 Web Interface. It also includes instructions for operating the DV-100 over a local area network (LAN) from a computer, tablet, or smartphone, using the Web App Interface. The following topics are included in this chapter:

- Web Interface Overview
- Obtaining System Information with the Web Interface
- Backing Up and Restoring Data with the Web Interface
- Web App Interface Introduction
- Web App Interface Features
- Web App Interface Menu Tree
- Working with the Home Page
- Configuring Inputs with the Web App Interface
- Configuring LED Setup with the Web App Interface
- Setting Up Test Patterns with the Web App Interface
- Creating Pan and Zoom Settings with the Web App Interface
- Viewing and Resetting Recent Changes
- Remotely Accessing Front-Panel Functions

Web Interface Overview

The DV-100 **Web Interface** supports remote control of all DV-100 features from a computer, tablet, smartphone, or other web-enabled mobile device. For example, you can download and restore logos and configuration files, upgrade system firmware, run test patterns, control input and output settings, and undo recent changes.

The interface consists of three sections:

- The **System Information** tab, which provides information about the DV-100 firmware version and lets you see when a new version is available.
- The **Backup and Restore** tab, from which you can back up system configuration files and logos, and restore them later. For more information about these features, refer to **Backing Up and Restoring Data with the Web Interface**, on page 86 of this chapter.
- The **Web App Interface** tab, from which you can launch either the Web App Interface, which lets you remotely control most DV-100 features, or the **Front Panel Emulator**, a Java applet with which you can control all front-panel functions.

Prerequisites to Using the Web Interface

To access the Web Interface, you must have:

- A PC, laptop, tablet, or mobile device with one of the following operating systems installed:
  - ~ Windows® XP, Windows® Vista™, or Windows® 7
  - ~ Mac OS® X
  - ~ Red Hat® Linux®
- One or more customer-supplied RJ-45 Ethernet cables
- A web browser

Note

To access the **Web Interface**, you can use most standard browsers. Using the Web App Interface, which operates the DV-100 requires an HTML5-compatible browser. For more information, refer to **Accessing the Web App Interface** on page 89 of this chapter.

- An Ethernet Switch, if you do not connect directly to the unit
- The IP address of the DV-100

  The default IP address for the DV-100 is **192.168.0.201**. If your unit is assigned a different IP address, use the front panel to locate it: Select **Ethernet** from the **System Menu**, and scroll to **IP**.

You can also access the DV-100 over any connected wireless networks. Refer to your network administrator for a network user ID and password.

Accessing the Web Interface

- To access the Web Interface, you can connect an DV-100 directly to a computer or mobile device, using a wireless network or a cable, or use an optional Ethernet Switch as described in the following procedure.

1. On the DV-100's rear panel, ensure that the Ethernet port is connected to an Ethernet Switch, and the Switch is connected to a data port.
2. Connect the Switch to the computer or mobile device from which you want to run the DV-100.
3. Connect inputs and outputs to the DV-100. For details, refer to the **Installation** section of Chapter 3, **Hardware Installation**, on page 19.
4. Power up the DV-100.
5. Power up the input source and output display devices.
6. Turn on the DV-100's **DHCP** setting:
   - ~ On the **Setup Menu**, select **System** > **Ethernet**.
   - ~ Select **DHCP** and turn it **On**.
7. On the computer or mobile device, open a browser and type the DV-100's IP address in the following format:

   nnn.nnn.nnn.nnn

   The DV-100 page appears on the display device(s), with the **System Information** tab available.

Obtaining System Information with the Web Interface

The **System Information** tab, shown in the following illustration, is the first page you see when you access the DV-100 from the web.

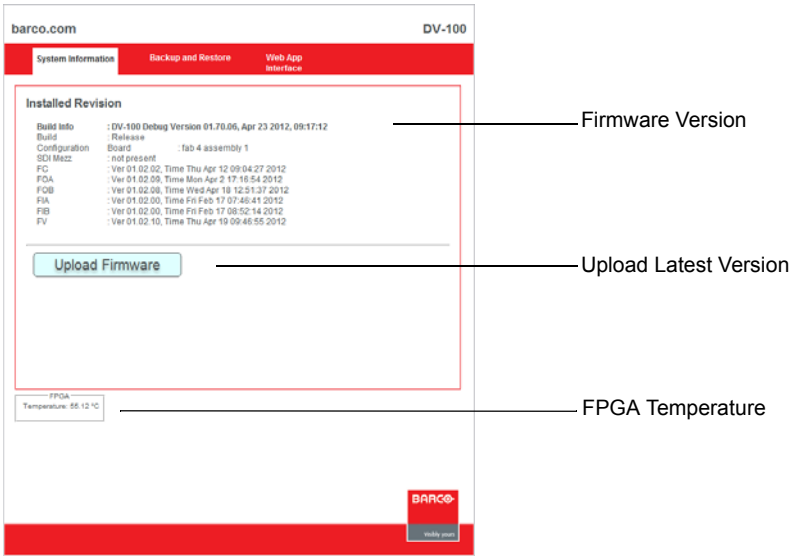


Figure 5-1. System Information Tab

On this page, you can:

- View the DV-100's current firmware version, on the **Build Info** line.
- View the firmware release number, on the **Build** line.
- Use the **Upload Firmware** feature to upload the current firmware version.

  For more information about the **Upload Firmware** features, refer to the **Upgrading Firmware Using the Web Interface** section on page 131, in Appendix B.

On this and the other tabs, you also can monitor the Field Programmable Gate Array (FPGA) temperature.

Backing Up and Restoring Data with the Web Interface

You can back up two types of DV-100 files using the Web Interface — system configurations and logos. The system configuration consists of any custom settings that you create for the DV-100. A logo is a stored image that you capture from the DV-100. You can download these files to a computer, then restore them for later reuse.

Note

Because smartphones and tablets limit the file types that you can upload, you cannot back up configuration files to these devices.

Backing Up Data with the Web Interface

- To save the current system configuration, use the following procedure:

  1. On the DV-100 page, select the **Settings Backup and Restore** tab. The page that appears provides two sets of options, one for backing up and restoring the current system configuration, and one for managing logos.

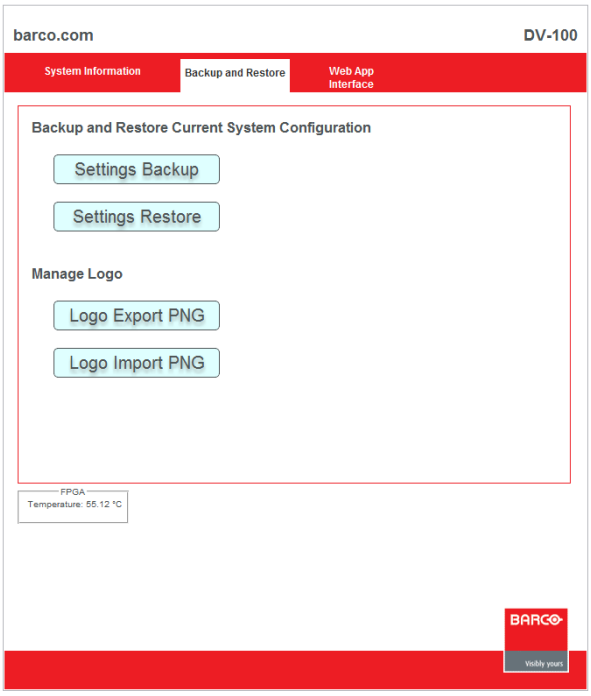


Figure 5-2. Backup and Restore Tab

2. Click either **Settings Backup** or **Logo Export PNG**.
3. In the **File Download** window that appears next, click **Save**.
4. In the **Save As** window, navigate to the directory where you want to store the file. Click **Save**.

Restoring Saved Data with the Web Interface

- To restore a saved system configuration, use the following procedure:

1. On the Web App Interface **Backup and Restore** tab, click **Settings Restore**. The window shown in the following illustration appears.

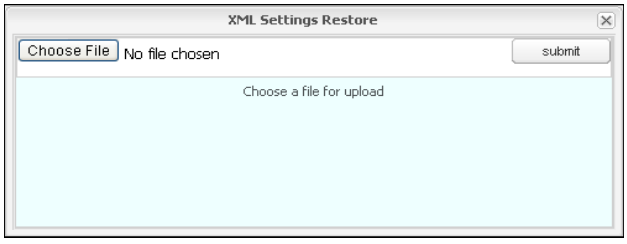


Figure 5-3. XML Settings Restore Window

2. Click **Choose File**.
3. In the window that appears, navigate to and select the file you want to restore.

   You are returned to the **XML Settings Restore** window, and the filename appears beneath the title bar.
4. Click **Submit**.

When the file is saved, you are prompted to restart the DV-100.

5. Click **Restart**. The system reboots using the restored configurations.

- To restore a saved logo, use the following procedure:

1. On the **Backup and Restore** tab, click **Logo Import PNG**.
2. On the window that appears, click **Choose File**.
3. Navigate to and select the logo that you want to restore.

Note	The logo file must be a .png file.

You are returned to the **Logo Import PNG** window, and the filename appears beneath the title bar.

4. Click **Submit**.

The logo file is uploaded to the DV-100. If the unit already has a stored logo, you are prompted to either overwrite the existing file or cancel the operation.

Web App Interface Introduction

The DV-100 Web App Interface provides access to most of the same functions and parameters found on the front-panel buttons and menus. To use the interface, select the **Web App Interface** tab, shown in the following illustration.

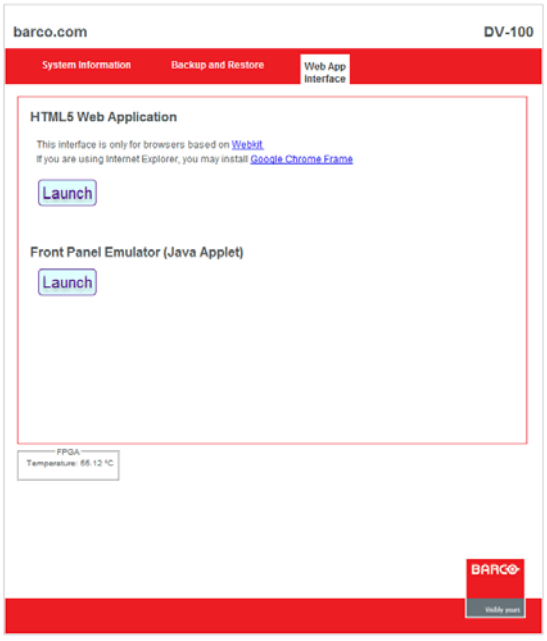


Figure 5-4. Web App Interface Tab

From this page, you can launch the interface, a series of web pages that provide access to key DV-100 features. You also can launch the **Front Panel Emulator**, a Java applet that lets you remotely control these and all other front-panel functions. Because the Emulator is

Java-based, it is not available when using Apple mobile devices.

Note

This chapter assumes the DV-100 is in its factory default condition when you launch the Web App Interface. If you connect to an DV-100 that has been adjusted from factory default condition, the settings you see on any web page may differ from those illustrated in this chapter.

Accessing the Web App Interface

To use the Web App Interface, open an **HTML5-compatible web browser**. The interface supports browsers powered by the cross-platform Web Kit layout engine. For a list of supported browsers, click the Web Kit link on the Web App Interface tab.

If you use Internet Explorer® versions 6, 7, 8, or 9, you can download **Google Chrome Frame**, a free plug-in, to access the Web App Interface.

The Web App Interface accesses an DV-100 using the DV-100's IP address. The default IP address of the DV-100 is **192.168.0.201**. If you work with multiple units, and each has a unique IP address, you can manage each DV-100 by entering successive IP addresses in the web browser's address bar.

About the Web App Interface

The Web App Interface presents easy-to-read buttons, menus, and graphics to help you navigate and make selections in most DV-100 menus.

Using the Web App Interface, you can:

- Adjust input format, color balance, and sizing
- Adjust output format, color effects, and color balance
- Mask an image
- Turn test patterns, raster boxes, and diagonal motion on or off
- Create an Area of Interest
- Set Pan and Zoom parameters
- Lock the front panel
- Freeze an image
- Transition to a stored logo or internal black

Note

This chapter assumes familiarity with DV-100 features. If you need detailed descriptions of DV-100 menus and functions, please refer to Chapter 4 **Menu Orientation**, on page 23.

About the Front Panel Emulator

The **Front Panel Emulator** is a graphical representation of the DV-100 front panel, from which you can remotely control the unit.

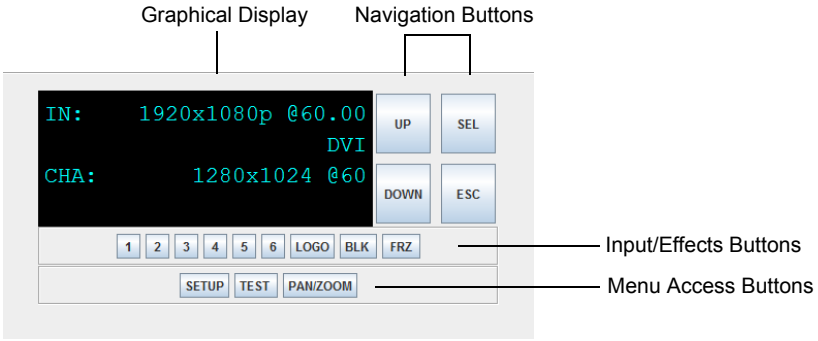


Figure 5-5. Front Panel Emulator (sample)

All front-panel functions, including those not available from the Web App Interface, are accessible from the **Front Panel Emulator**. For example, you can create custom formats and configuration files, define a view, use preset masks, restore factory default settings, and perform all other DV-100 functions.

Note

Because the Front Panel Emulator is a Java applet, it is not available when using Apple mobile devices.

For detailed information about using the Front Panel Emulator, refer to **Remotely Accessing Front-Panel Functions** on page 111.

Web App Interface Features

The following illustration shows the features of a typical Web App Interface page.

Figure 5-6. Web App Interface Features

Web pages typically consist of the following elements:

- **Title Bar** — The title bar displays the DV-100 name when you first access the Web App Interface. As you select options from the side menu, the title bar displays the name of the active menu.
- **Navigation Button** — To the right of the title bar is a button for navigating back one level in the interface. This button appears on every page except the **Home** page. For more information, refer to **Navigation Button** on page 92.
- **Side Menu** — At the left of each page, a side menu provides access to key menus and submenus. The selected menu is highlighted and its title appears in the title bar.
- **Input Panel** — The panel beneath the title bar displays selectable input buttons. This panel appears at the top of every page. For details, refer to **Input Panel** on page 92.
- **Quick Buttons** — A row of buttons providing quick setting adjustments for common scenarios.
- **Section Title** — The section title appears directly beneath the Input Panel. If a page consists of multiple sections, each section has a title.
- **Slider, Editable Text Fields, and On/Off Buttons**— Web App Interface pages use labeled sliders and corresponding text fields whose values can be selected, typed, changed with a slider, or turned on and off. For details, refer to **Sliders** on page 93, **On/Off Buttons** on page 93, and **Rotating Lists** on page 94.
- **Refresh Button** — Each page in the interface contains a **Refresh** button that refreshes the Web App Interface with any new settings that have been changed from the front panel.

Using Web App Interface Buttons and Sliders

Web App Interface pages display graphic buttons and sliders that let you navigate through the site, access all inputs and effects, turn options on or off, or select values within a range. This section discusses each type of graphic.

Navigation Button

On every page except the **Home** page, a navigation button appears at the top left of the interface. This button lets you navigate back one level. The following illustration shows the two states of the navigation button.

Figure 5-7. Two States of the Navigation Button

- The **Back** button appears when you click **Setup** in the side menu. **Back** lets you navigate back one level.
- The **Setup** button appears when you enter the **Input Menu** or **Output Menu**. **Setup** lets you navigate back to the **Setup Menu**. The **Setup** button persists as you navigate down through the **Input** or **Output** menu options.

Use this navigation button — **not your browser's Back button or arrow** — to navigate back through the Web App Interface. If you use the browser's navigation tools, you risk losing your settings.

Input Panel

The panel at the top of the interface displays all the input buttons, plus the **LOGO**, **BLK** (Black)**,** and **FRZ** (Freeze) effects buttons. This panel remains on display as you navigate through the site.

Figure 5-8. Input Button Panel

The buttons on this panel work in exactly the same way as the buttons on the DV-100 front panel. Click a button to switch inputs, freeze the image, or transition to a logo or internal black. As you click a button in this panel:

- The button is highlighted in this panel.
- The corresponding button on the front panel lights up.

Sliders

A slider lets you adjust values within a range. The available range and the units (i.e., pixels vs. percentages) are determined by the parameter you are adjusting.

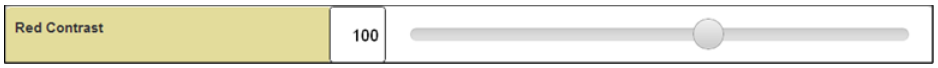


Figure 5-9. Web App Interface Slider

There are three ways to use the slider:

- Click the round button and hold it down as you drag it to the left or right.
- Click the editable text field to the left of the slider and type a new value. After you click outside the field, the slider moves to the left or right, and the display reflects the new setting.
- Click the editable text field and use the mouse wheel to scroll through the values.

On/Off Buttons

The buttons shown in the following illustration turn a feature on or off. When the background of an **On/Off** button is green, the feature is turned **On**. When the background of the button is gray, the feature is turned **Off**. In the following illustration from the **Test Patterns** page, **Raster Box** is turned on and **Diagonal Motion** is turned off.

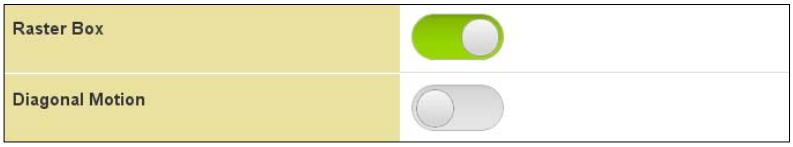


Figure 5-10. Two States of the On/Off Button

To turn a feature on or off, click the button and hold it down as you slide it to the left or right. Your selection takes effect immediately.

Using Web App Interface Menus

The Web App Interface displays two types of menus — the side menu that appears at the left side of each page, and rotating pop-up lists that can be displayed for select fields.

Using the Side Menu

The side menu is a dynamic list of submenu options, displayed on the left side of each page. To open a submenu, click one of the options.

The options that appear in the menu change as you navigate through the Web App Interface. On the **Home** page, the side menu presents the top-level menus shown in the following illustration.

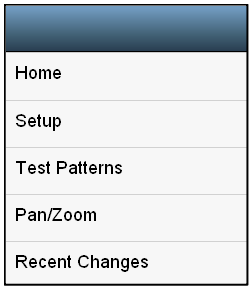


Figure 5-11. Home Page Side Menu

When you click **Setup**:

- The side menu changes to present the **Input** and **Output** submenus.
- The **Back** button appears at the upper left corner.
- The **Status** section to the right of the page does not change.

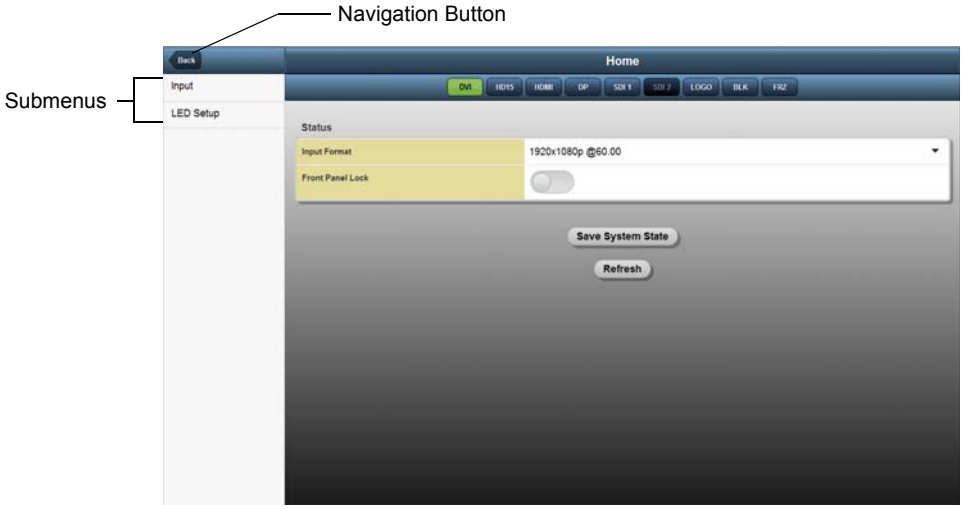


Figure 5-12. The Setup Page

As you drill down through submenus, the content of the right side of the page changes only when you come to a page that contains parameters you can adjust. For example, when you click **Test Patterns** on the **Home** page, the test pattern parameters are displayed on the right side of the screen. By contrast, if you click **Setup** on the **Home** page, the **Status** section remains in place until you drill down to the **Input Main** page.

For an overview of all the menus in the Web App Interface, refer to the **Web App Interface Menu Tree** section on page 97.

Rotating Lists

If a field displays a down arrow at the far right, you can click the arrow to display a pop-up rotating list, as shown in the following illustration. When the list appears, it displays a pointer to the field you selected, either at the top or the bottom of the menu box. In this illustration, the list for the **Unit** field is displayed.

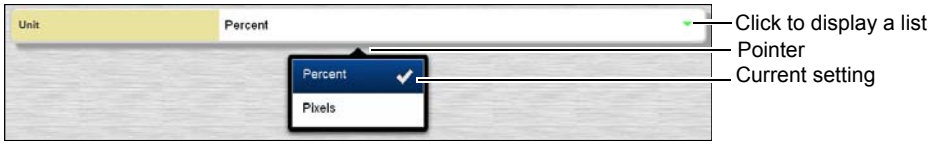


Figure 5-13. A Rotating List

The current setting is marked with a checkmark. To change this setting in a two-setting list such as the one illustrated, simply click the other option.

For longer lists, use the mouse wheel to scroll through the options, or use a “flick scrolling” technique. Click toward the bottom of the list, hold the mouse button down, and “flick” the list upward to see additional options. Or click toward the top of the list, hold the mouse button down, and “flick” the list downward.

As you scroll through a list, a vertical line, shown in the following illustration, appears at the right side of the menu as a guide.

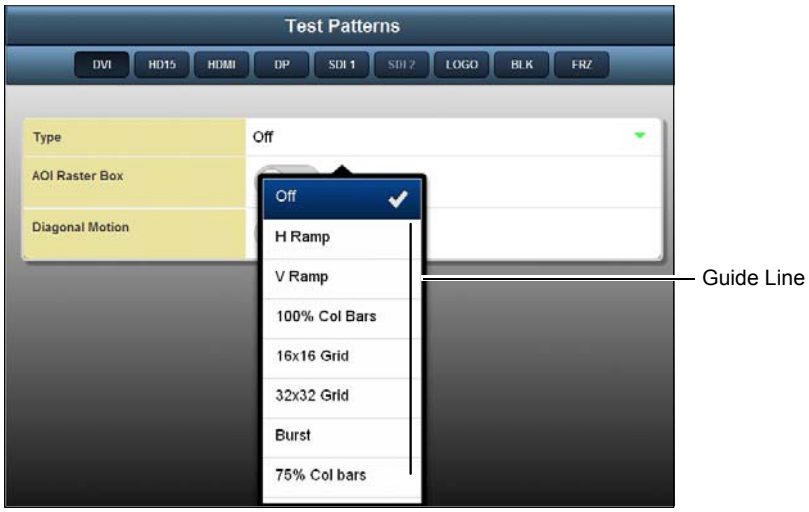


Figure 5-14. Guide Line in a Rotating List

When the top of this line is at the top of the menu box, you have reached the top of the menu.

- A gap between the top of this line and the top of the menu box indicates that there are additional choices **above** those that are displayed.
- A gap between the bottom of this line and the bottom of the menu box indicates that there are additional choices **below** those that are displayed, as shown in the illustration.

For very long lists, such as **Input Format** or **Output Format** lists, buttons appear at the top of the list to let you page up or down, as shown in the following illustration.

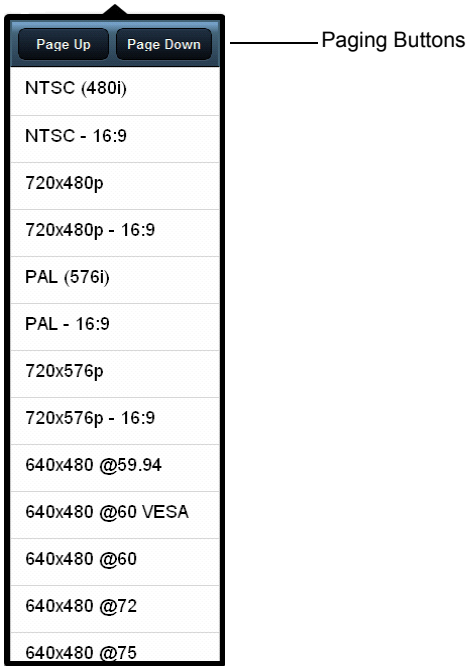


Figure 5-15. Page Up and Page Down Buttons

You can also use the mouse wheel to scroll through the list.

Web App Interface Menu Tree

The following illustration is a diagram of the menu tree of the Web App Interface. Refer to this diagram as you learn to navigate through the interface. In addition to the menus illustrated here, you can use the **Front Panel Emulator** to remotely change other front-panel settings. For more information, refer to **Remotely Accessing Front-Panel Functions** on page 111 of this chapter.

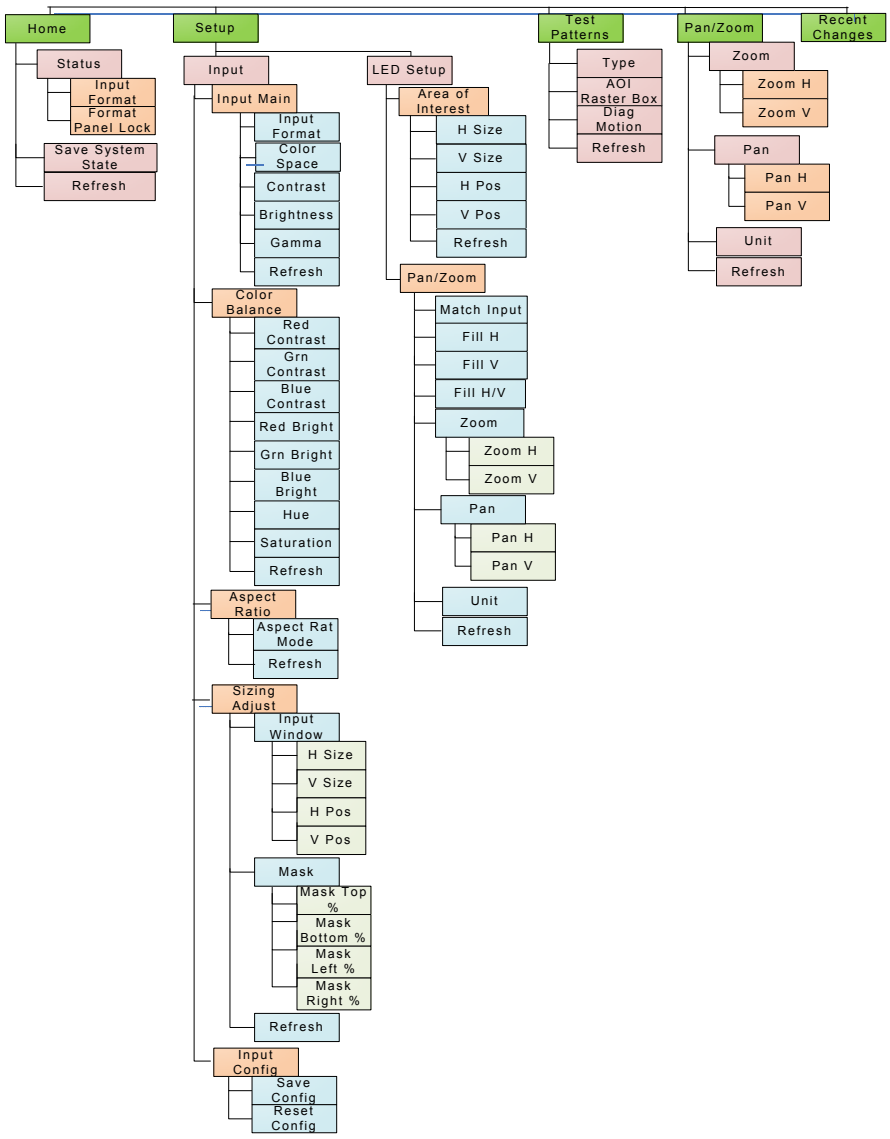


Figure 5-16. Web App Interface Menu Tree

Working with the Home Page

From the Web App Interface **Home** page, you can make quick adjustments to the input or output format, lock the front panel, save custom settings, refresh the page, or navigate anywhere in the interface.

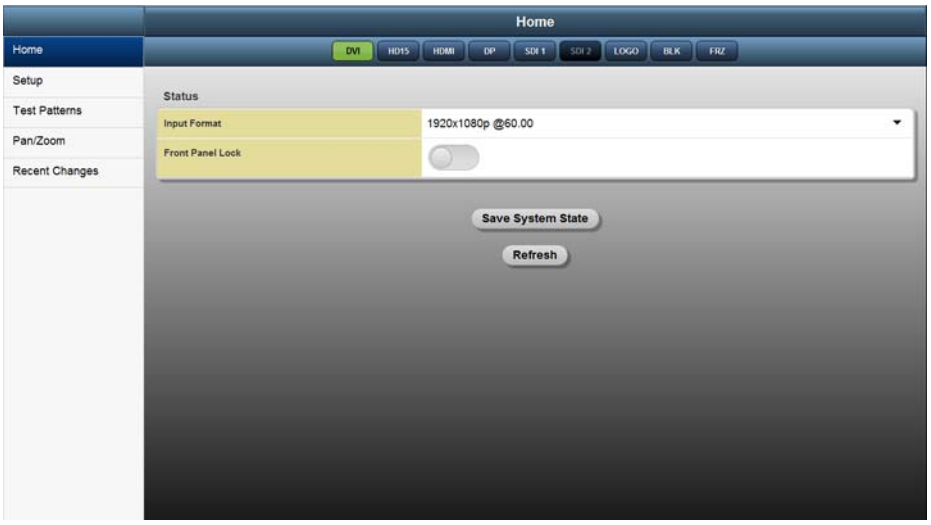


Figure 5-17. Web App Interface Home Page

This section includes the following topics:

- **Changing Input Formats with the Web App Interface**
- **Locking the Front Panel with the Web App Interface**
- **Saving System State with the Web App Interface**
- **Refreshing the Web App Interface**
- **Transitioning to a Logo or Black with the Web App Interface**
- **Freezing an Image with the Web App Interface**

Changing Input Formats with the Web App Interface

The Web App Interface provides two locations from which you can change both input formats:

- You can set input formats on the **Home** page.
- You can set input formats on the **Input Main** page.

The procedure in all two locations is the same:

- To change the input format, use the following procedure:
  1. Select the input from the panel at the top of the page.
  2. Click the down arrow in the **Input Format** field.
  3. In the rotating list that appears, select the format you want. The format changes immediately for the selected input. For information about using lists, refer to **Rotating Lists** on page 94.

Note The **Input Format** lists do not include custom formats you may have previously saved to the DV-100. To apply a custom format, use the front panel **Input** menu.

Locking the Front Panel with the Web App Interface

To lock the front panel from the **Home** page, click and hold down the **Front Panel Lock** button and slide it to the right. When you release the button, the background of the button turns green to indicate that the lock is active. When the front panel is locked, you can continue to use the Web App Interface to adjust settings on the DV-100.

The default setting for **Front Panel Lock** is **Off**.

Saving System State with the Web App Interface

The **Save System State** button on the **Home** page saves all custom settings that you create, whether you change them from the Web App Interface or the front panel.

Refreshing the Web App Interface

The **Refresh** button appears on every page of the Web App Interface. This button refreshes the Web App Interface to update *all* settings you change using the front panel, even settings that do not apply to the page you are viewing.

Note Settings you change using the front panel are not applied to the Web App Interface until you click **Refresh**.

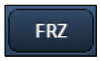
Transitioning to a Logo or Black with the Web App Interface

Select **LOGO** to transition to a stored logo. To transition back to the input video, click **LOGO** again.

Select **BLK** to transition to internal black. To transition back to the input video, click **BLK** again.

For information about setting up transition timings and effects, refer to **Using a Logo or Internal Black** in Chapter 4, on page 73.

Freezing an Image with the Web App Interface



To freeze the video image on display, click the **FRZ** button in the **Inputs** panel.

To unfreeze the image, click the appropriate input button to resume the video you froze, or click another input button to display a different image.

Configuring Inputs with the Web App Interface

The **Input Main** page lets you adjust the input format, contrast, brightness, and gamma settings. In addition, you can access the **Color Balance** and **Sizing Adjust** pages from the side menu on this page.

After configuring the input, you can save your settings for later use and recall them when necessary. For details about these operations, refer to **Backing Up and Restoring Data with the Web Interface**, on page 86 of this chapter.

To access **Input Main** from the **Home** page, choose **Setup** > **Input** > **Input Main**.

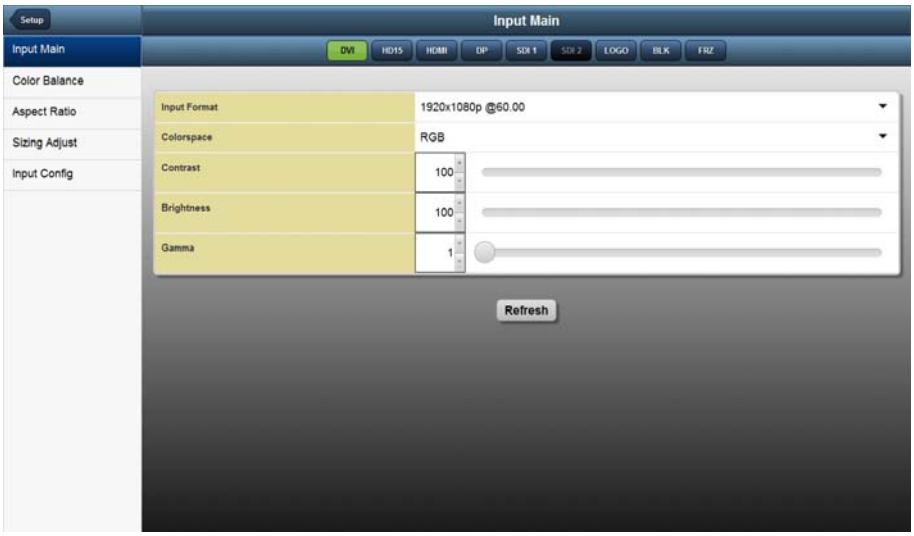


Figure 5-18. The Input Main Page

The following topics are included in this section:

- **Working with the Input Main Page**
- **Adjusting Input Color Balance with the Web App Interface**
- **Sizing, Positioning, and Masking an Image**

Working with the Input Main Page

Like the **Home** page, the **Input Main** page provides a field for changing the input format. In addition, you can set contrast, brightness, and gamma values for the current input. You can also access two submenus — **Color Balance** and **Sizing Adjust**.

- On the **Input Main** page:

  1. Select an input.
  2. To change the input format, click the down arrow in the **Input Format** field and choose one of the options.
  3. To change contrast, brightness or gamma, click the appropriate slider button and drag it to the left or right. Alternatively, you can click the number field to the left of the slider and type a different number. Your change takes effect immediately.
     - **Contrast** and **Brightness** values are in percentages, ranging from **25%** to **150%**. The default setting is **100%**.
     - **Gamma** values range from **0.3** to **3.0**, in 0.1 increments. The default value is **1.0**.

Adjusting Input Color Balance with the Web App Interface

On the **Input Main** page, select **Color Balance** in the side menu. The **Color Balance** page appears, as shown in the following illustration. The values for contrast, brightness, and saturation are in percentages. The values for hue are in degrees.

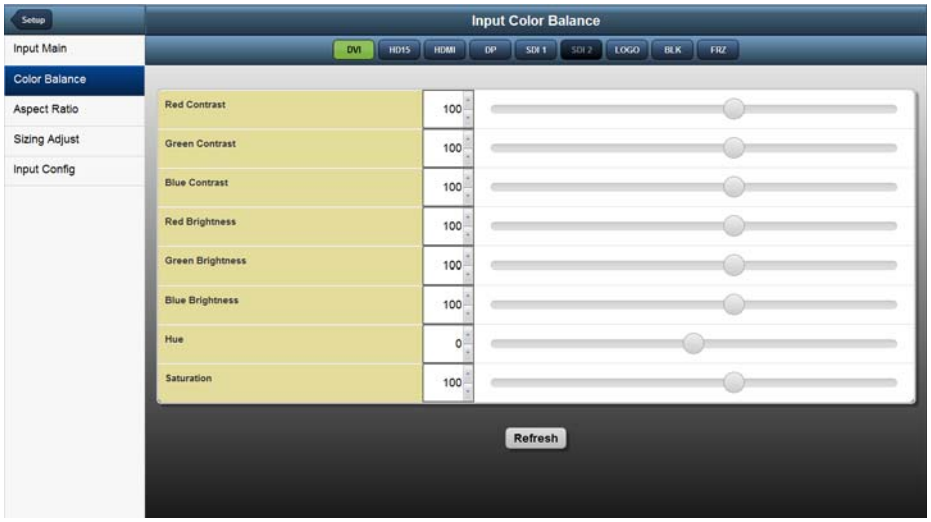


Figure 5-19. Input Color Balance Page

You can adjust both RGB contrast and RGB brightness within a range of **25%** to **150%**. The default setting for both contrast and brightness is **100%**.

Hue is measured in degrees. The range is **-90** to **+90** degrees. The default setting is **0**.

Saturation is a percentage, ranging from **0%** to **150%**. The default setting is **100%**.

Setting the Aspect Ratio

The **Input Aspect Ratio Submenu**, shown in the following illustration, provides one way to affect aspect ratio. The DV-100 selects and displays the input video aspect ratio according

to the selected input format.

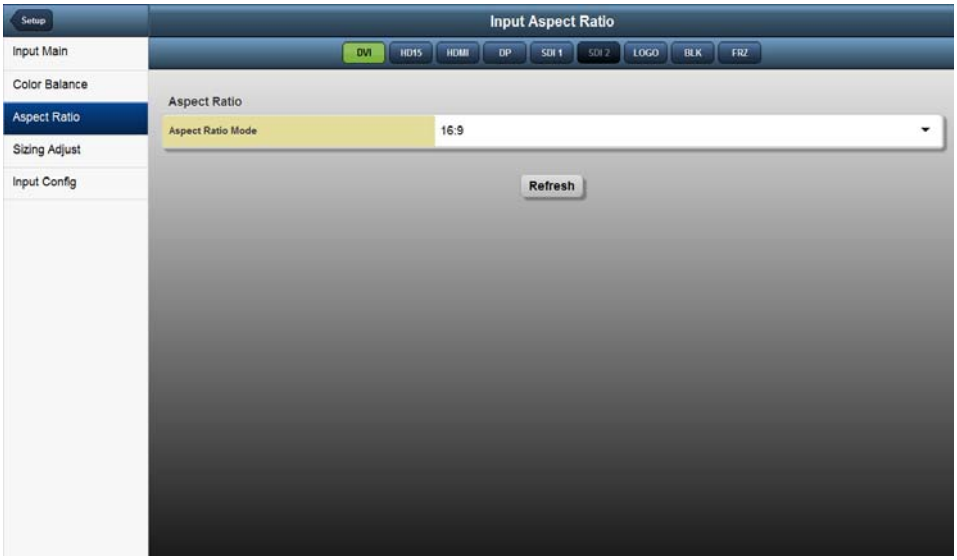


Figure 5-20. The Input Aspect Ratio Submenu

The settings on this menu can be overridden by the input horizontal and vertical **Zoom** settings. If you override the settings, this menu may not display the input's actual aspect ratio.

To select the **Input Aspect Ratio Submenu** from the **Input Menu**, scroll to **Aspect Ratio** and press **SEL**. Then select one of the following **Aspect Ratio Mode** options:

- **Aspect Ratio Mode** — The **Aspect Ratio Mode** value is one of the following: **1:1**, **3:2**, **4:30**, **5:4**, **16:9**, **16:10** or **Custom**. The DV-100 detects the input format, and displays the appropriate aspect ratio.
  - ▲ **Example:** Computer video at 1280x1024 @ 60 Hz defaults to **5:4**.
  - ▲ **Example:** NTSC video defaults to **4:3**.
  - ▲ **Example:** HDTV1080i video defaults to **16:9**.
- **Ratio** — This option is available only when **Aspect Ratio Mode** is set to **Custom**. It is a decimal number ranging from **0.750** to **3.000**.

Sizing, Positioning, and Masking an Image

The **Input Sizing Adjust** page, shown in the following illustration, is divided into two sections:

- **Input Window** — In this section, you can adjust the size and position of the image within the active area.
- **Mask** — In this section, you can create a mask for one or more edges of the image.

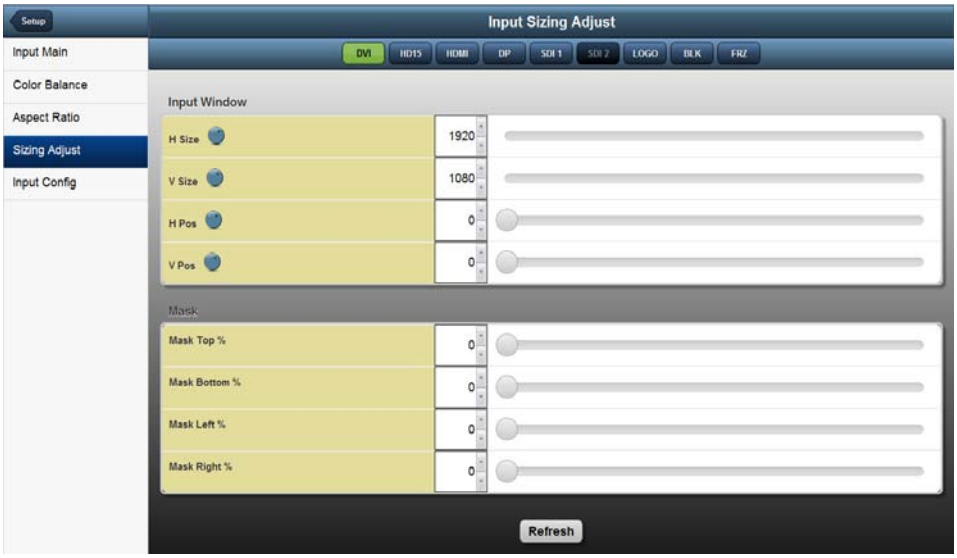


Figure 5-21. Input Sizing Adjust Page

Sizing and Positioning an Image with the Web App Interface

To adjust the size or position of the video inside the active area, go to **Setup** > **Input** > **Input Main** > **Sizing Adjust**.

In the **Input Window** section of the **Input Sizing Adjust** page, the **Size** and **Pos** (Position) functions allow you to size the image, and then position the resized image within the active area.

- To change input image size and positioning, use the following procedure:

1. Select **H Size** to size both the left and right edges **simultaneously**. Values are in pixels, ranging from **0** to the maximum number of horizontal pixels. The output “window” is maintained in both size and aspect ratio.

   The default setting for **H Size** is the current maximum active pixels. Moving the slider to the *left* zooms in on the image and expands the image along the horizontal plane. You can then use the **Pos** functions to move to the portion of the image you want to display.

2. Select **V Size** to size both the top and bottom edges simultaneously. Values are in lines, from **0** to the maximum number of vertical lines. The output “window” is maintained in both size and aspect ratio.

   The default setting for **V Size** is the current maximum active lines. Moving the slider to the *left* zooms in on the image and expands the image along the vertical. You can then use the **Pos** functions to move to the portion of the image you want to display.

3. Select **H Pos** to pan an image left or right, within the active area. Values are in pixels. The default value is **0**, representing the horizontal center of the active area. Decreasing the **H Pos** value moves the image to the right. Increasing the **H Pos** value moves the image to the left.
4. Select **V Pos** to pan an image up or down, within the active area. Values are in lines. The default value is **0**, representing the vertical center of the active area. Decreasing the **V Pos** value moves the image up. Increasing the **V Pos** value moves the image down.

Masking an Image with the Web App Interface

In the **Mask** section of the **Input Sizing Adjust** page, you can mask each edge separately. Masking an image means applying black bars to one or more edges, typically to remove noise. Mask values are given in percentages, and range from **0%** to **100%**. The default mask value is **0%**.

- To mask the image on display, change the values for one or more edges, either by moving the slider to the right from **0**, or by typing a percentage value in the field to the left of the slider.

If you wish to mask all the edges at once to achieve a particular aspect ratio, you can do so from the front panel. Refer to the **Using Mask Presets** section of Chapter 4, on page 39.

Saving and Resetting Input Configurations

After changing an input's settings, you can save those settings on the **Input Config** page. On this page, you can also restore the input's default configuration after making changes.

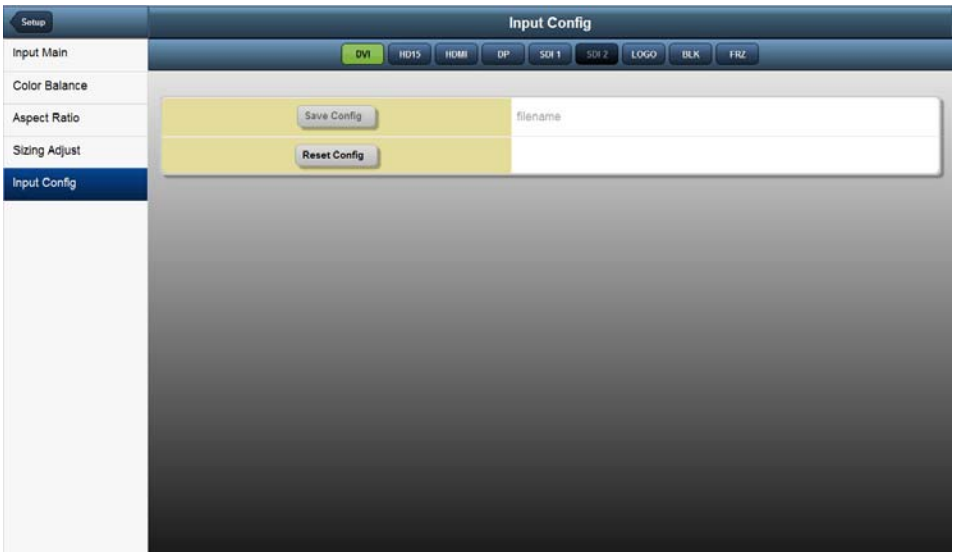


Figure 5-22. The Input Config Page

- To save an input's custom configuration settings, use the following procedure:
  1. With the input selected, navigate to **Input** > **Input Config**.
  2. Click the **filename** field beside the **Save Config** button. Type a filename.

     The filename can consist of up to 20 alphanumeric characters. If you include spaces or special characters — such as asterisks, percentage signs or ampersands — the field background turns red and you cannot save the name.

3. Click **Save Config**. A confirmation message appears.

- To restore the input to its default configuration, select the input and click **Reset Config**.
- You can recall a saved configuration using the front panel, as described in **Recalling an Input Configuration**, on page 47 of Chapter 4.

Configuring LED Setup with the Web App Interface

Setting an Area of Interest with the Web App Interface

The output **Area of Interest** (AOI) is the portion of the display that your video occupies. The default AOI exactly overlaps the output active area, but you can position the video anywhere in that active area. As you do so, you change the size of the image without affecting aspect ratio.

For details about positioning the image in the Area of Interest, and to see examples, refer to **Setting the Area of Interest** in Chapter 4, on page 50.

From the **Home** page, click **Setup** > **LED Setup** > **Area of Interest**. The **Area of Interest** page appears, as shown in the following illustration.

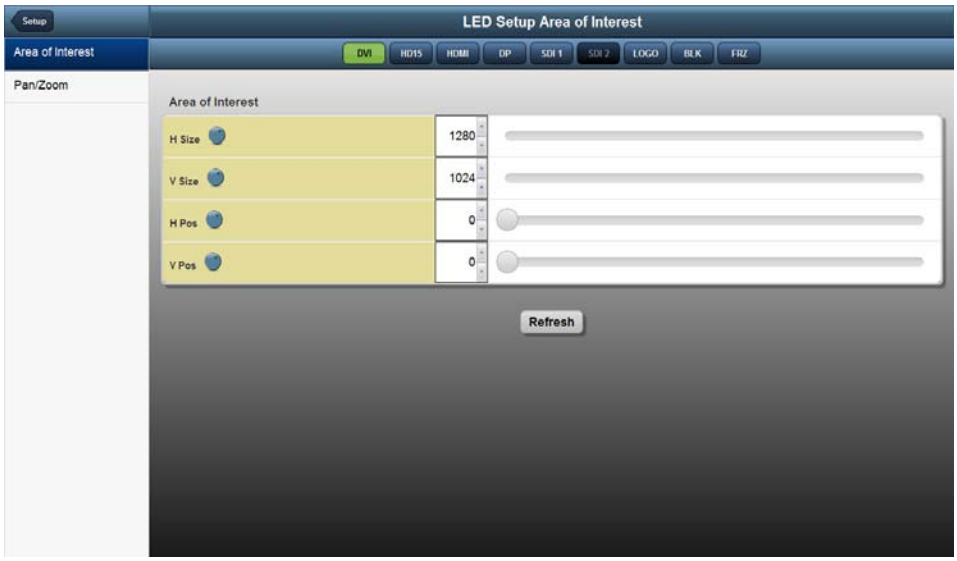


Figure 5-23. LED Setup Area of Interest Page

- To change the Area of Interest, use any of the following settings:
  - **H Size** — Determines the width (in pixels) of the Area of Interest. This setting must be equal to or less than the **H Active** setting of the output timing.
  - **V Size** — Determines the height (in lines) of the Area of Interest. This setting must be equal to or less than the **V Active** setting of the output timing.
  - **H Pos** — If **H Size** is less than the **H Active** setting of the output timing, you can move the image horizontally. The default setting of **0** represents the *left* of the display, so increasing this value moves the Area of Interest to the *right*.

- **V Pos** — After adjusting the **V Size**, you can move the image vertically within the output's active vertical limits. The default setting of **0** represents the *top* of the display, so increasing this value moves the Area of Interest *down*.

Setting Pan/Zoom with the Web App Interface

The **LED Setup Pan/Zoom Page** provides a quick way to position the video image on your LED display.

From the **Home** page, click **Setup** > **LED Setup** > **Pan/Zoom**. The **Pan/Zoom** page appears, as shown in the following illustration.

Figure 5-24. LED Setup Pan/Zoom Menu

On this page:

- **Match Input** fills the Area of Interest with the **unscaled** input image. If you created an Area of Interest that is smaller than the default active area for the input, a portion of the image is not displayed. You can then use the Pan settings to display the portion of the image you want to show on the wall.
- **Fill H** fills the active area to the left and right edges.
- **Fill V** fills the active area to the top and bottom edges.
- **Fill H/V** fills the entire active area with the **scaled** image.
- **Zoom H** zooms in or out on the horizontal center of the image. Increasing this setting "stretches" the image to the right and left along the horizontal plane. Decreasing this setting brings the right and left edges in toward the center of the active area.
- **Zoom V** zooms in or out on the vertical center of the image. Increasing this setting "stretches" the image up and down along the vertical plane. Decreasing this setting brings the top and bottom edges in toward the center of the active area.
- **Pan H** moves the image to the right or left on the wall.
- **Pan V** moves the image up or down on the wall.
- **Units** applies to the Pan and Zoom settings. The choices are **Pixel** and **Percent**. The default setting is **Pixel**.

- **Refresh** refreshes the Web App Interface with any new settings that have been changed from the front panel.

Setting Up Test Patterns with the Web App Interface

From the Web App Interface, you can set up test patterns on an output display, turn the Area of Interest raster box on or off, and set up diagonal motion for the pattern.

To access the **Test Patterns** page from the **Home** page, select **Test Patterns** from the side menu.

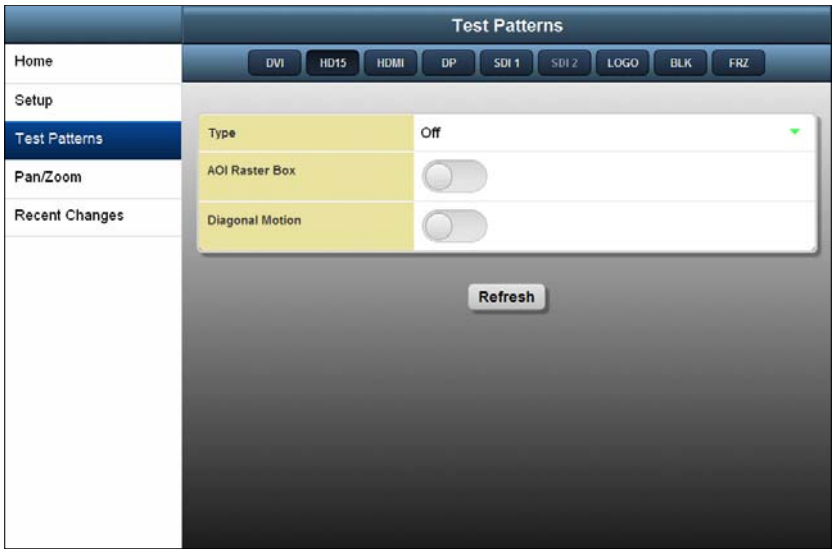


Figure 5-25. Test Patterns Page

- To display a test pattern or turn on the Area of Interest raster box, use the following procedure:

  1. From the **Type** menu on the **Test Patterns** page, select the type of test pattern to display. The options are:

Off	H Ramp	V Ramp
100% Color Bars	16x16 Grid	32x32 Grid
Burst	75% Color Bars	50% Gray
Gray Steps 1	Gray Steps 2	White
Black	SMPTE Bars	

  2. To turn on the Area of Interest raster box, move the **Raster Box** button to the right. This raster box is a broken one-pixel-wide green line, inside which you can position the display image.
  3. To set diagonal motion for the test pattern, move the **Diagonal Motion** button to the right.
     - ~ The motion is a bottom-right to top-left diagonal for 16x16 Grid, 32x32 Grid, Burst, 75% Color Bars, and Gray Steps 1.
     - ~ The motion is right to left for 100% Color Bars.
     - ~ The motion is bottom to top for Gray Steps 2.
     - ~ There is no motion in H Ramp, V Ramp, or Black patterns.
     - ~ For 50% Gray and White, the motion is a strobing effect.

Creating Pan and Zoom Settings with the Web App Interface

The **Pan/Zoom** page lets you zoom in or out on an image, and pan horizontally or vertically to the portion you wish to display. You can assign the pan and zoom settings to an input using this page.

Figure 5-26. Pan/Zoom Page

On this page, you can set pan and zoom values in pixels or percentages.

Note

If you wish to save your settings, you can do so from the front panel. For more information, refer to **Creating and Saving Views** in Chapter 4, on page 62.

On the **Pan/Zoom** page, the options are:

- **Zoom H** and **Zoom V** define horizontal or vertical zoom settings individually. The default setting is the maximum number of pixels (**Zoom H**) and lines (**Zoom V**). You can increase or decrease these values.
- **Pan H** and **Pan V** adjust horizontal and vertical pan settings individually.
- **Unit** defines the units you are working in — either pixels or percentages.

Viewing and Resetting Recent Changes

The Web App Interface **Recent Changes** page lets you revert most settings in the **Setup**, **Test Patterns**, and **Pan/Zoom** menus to their previous values after you have made changes.

The following settings ***cannot*** be reset to their default values on this page:

- Input Format
- Front Panel Lock
- Test Pattern Type

Note

Changes to the **Raster Box** and **Diagonal Motion** settings are displayed on the **Recent Changes** page and can revert to their previous settings.

- To revert one or more settings to their previous values, use the following procedure:

1. Select an input.
2. From the **Home** menu, select **Recent Changes**. The **Recent Changes** page appears, displaying changes made to the selected input's parameters.

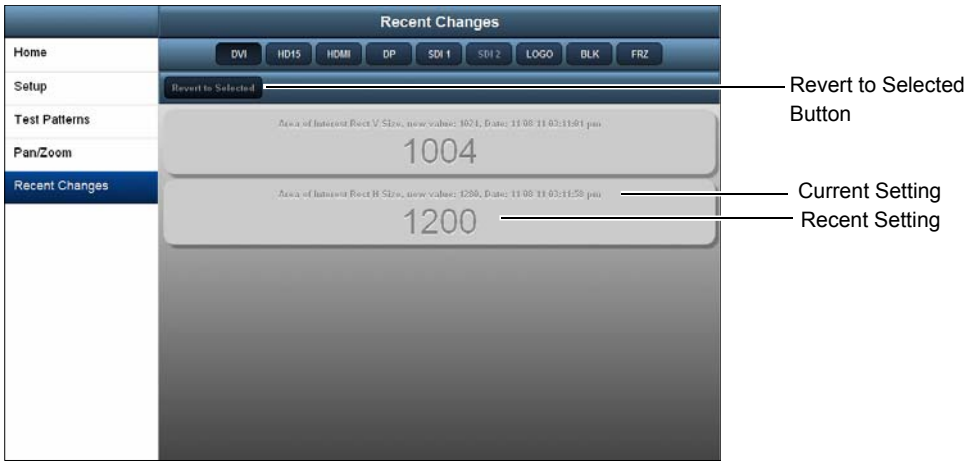


Figure 5-27. Recent Changes Page

~ The first line of each field displays the name of the page and the parameter that changed, along with the new value for that parameter.

~ The second line displays the value to which you can revert this setting.

~ The **Revert to Selected** button is not available until you select a value to revert.

If you made numerous changes to the same parameter, each change is displayed on this page, and you can select the value to which you want to revert the parameter.

If this list is long, you can scroll through it using the mouse wheel or the elevator bar at the right of the page.

3. To change a value, select one or more fields. The background color of the selected field(s) changes, as shown in the following illustration. The **Revert to Selected** button becomes available.

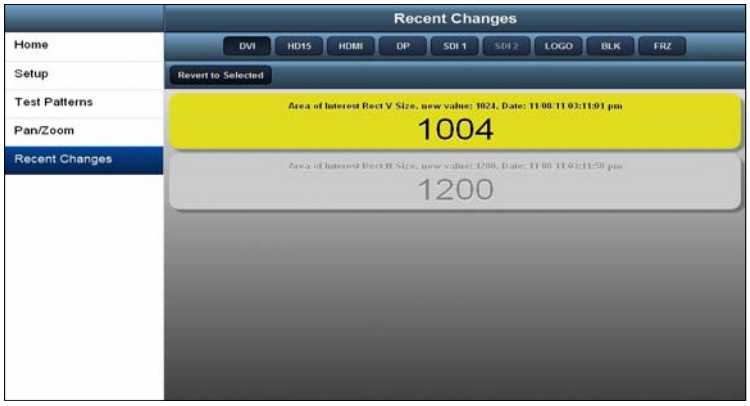


Figure 5-28. Selection on the Recent Changes Page

4. Click **Revert to Selected**.

   The selected settings revert immediately to their previous values, and they are removed from this page.

Remotely Accessing Front-Panel Functions

The **Front Panel Emulator** lets you access the DV-100 front panel to augment Web App Interface functionality when you operate the unit remotely. All front-panel menus and buttons are available to you remotely through the Emulator.

Note

Because the Front Panel Emulator is a Java applet, it is not available when using Apple devices.

As the following illustration shows, the Front Panel Emulator presents a replica of the four-line display screen on the front panel. The content on the screen reflects the settings of the DV-100 to which you are connected.

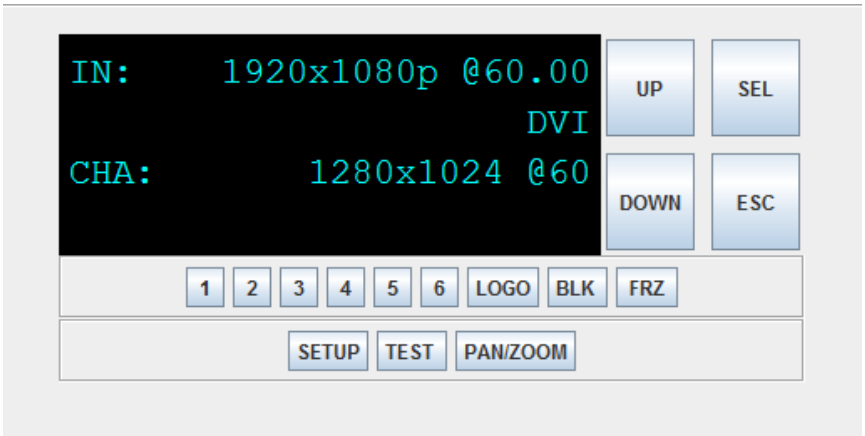


Figure 5-29. Front Panel Emulator

The Emulator also provides:

- **SEL** and **ESC** buttons for making selections or backing out of menus
- Two navigation buttons — **UP** and **DOWN** — to take the place of the **ADJUST** knob
- All the front-panel **Input** and **Effects** buttons
- Buttons to launch the **Setup**, **Test Patterns**, and **Pan/Zoom** menus

For information about using any of the front-panel menus or functions, refer to Chapter 4 **Menu Orientation**, on page 23.

Launching the Front Panel Emulator

To launch the **Front Panel Emulator**, use the following procedure:

1. On the **Web App Interface** tab, click the **Launch** button below **Front Panel Emulator** (Java Applet).

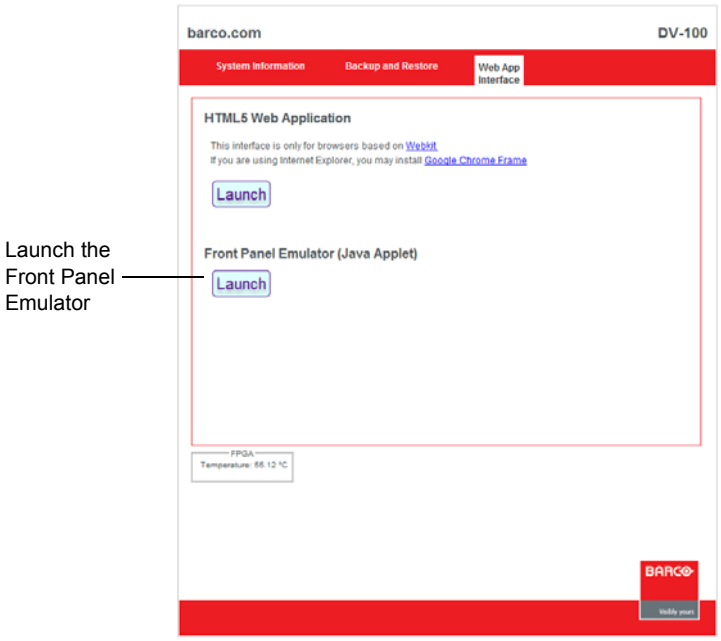


Figure 5-30. Front Panel Emulator Launch Button

2. The Front Panel Emulator is a Java applet that you must install the first time you use the Emulator. To install it, follow the on-screen instructions.

   If the Java applet is installed and you are prompted to run it, select either **Run this time** or **Always run on this site**.

   The **Front Panel Emulator** appears.

3. Click an **Input** button to select an input.

4. Click the **SETUP** button to access the **Setup Menu**. The menu appears in the graphical display screen.

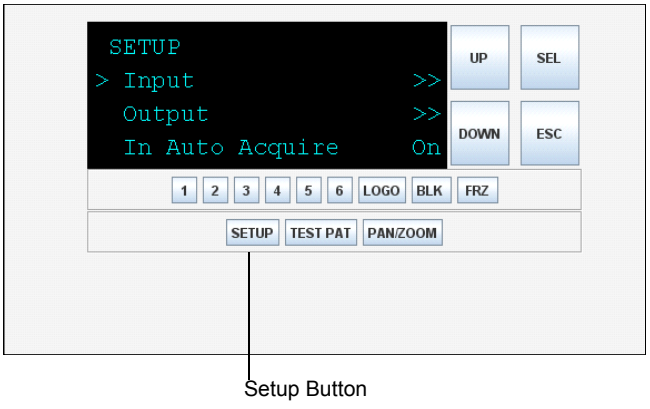


Figure 5-31. Setup Menu — Front Panel Emulator

5. Use the **DOWN** button to scroll down through this menu. Click **SEL** to select an item.

   Continue using the navigation buttons to scroll through menu options and make selections.

6. To exit the **Setup Menu** and return to the **Status Menu**, click **SETUP** again. Or click another button to work with a different input, a test pattern, or one of the effects.

Exiting the Front Panel Emulator

- To exit the Front Panel Emulator, click the **Back** button or arrow on your web browser. You return to the **System Information** tab of the interface.

A. Specifications

In This Appendix

This appendix provides detailed technical specifications for the DV-100. The following topics are provided:

- Input Specifications
- Output Specifications
- User Control Specifications
- Physical and Electrical Specifications
- Communications Specifications
- Standard Connector Pinouts
- Input Resolutions

Input Specifications

The following table lists DV-100 input specifications.

Table A-1. DV-100 Input Specifications

Input	Detail	Specification
Input 1	Connector	DVI-I
	Format (Digital)	All single-link DVI digital formats up to 165 MHz, per DVI 1.0 Specification
		All dual-link DVI formats up to 330 MHz
		Max H Active: 4096 Max V Active: 3072
	Format (Analog)	NTSC/PAL composite and Y/C video SD YPbPr with bi-level sync HD YPbPr with tri-level sync RGBHV/RGBS/RGsB computer video with bi-level sync
	Sampling	Analog sources with pixel rates up to 170 MHz are sampled 1:1. Analog sources with pixel rates above 170 MHz are filtered and sampled at 170 MHz, including but not limited to: • 1920x1080p • 1920x1200 p • 2048x1080p
	Loop-through	Active loop-through output of all input signals
	EDID	EDID version 1.3 compatible
	HDCP hardware support	HDCP is not supported
Input 2	Connector	HD-15 VGA
	Format	NTSC/PAL composite and Y/C video SD YPbPr with bi-level sync HD YPbPr with tri-level sync per SMPTE 274 RGBHV/RGBS/RGsB computer video with bi-level sync
	Sampling	Analog sources with pixel rates up to 170 MHz are sampled 1:1. Analog sources with pixel rates above 170 MHz are filtered and sampled at 170 MHz, including but not limited to: • 1920x1200 p • 2048x1080p
	EDID	EDID version 1.3 compatible
	Loop-through	Active loop-through output of all input signals.

Table A-1. DV-100 Input Specifications

Input	Detail	Specification
Input 3	Connector	HDMI (Type A)
	Formats	RGB and YCbCr at 4:4:4, YCbCr at 4:4:2, per HDMI 1.4 specification
		Deep color at 8/10/12 bits
		Resolutions up to 2048x1080p @ 60 Hz
	EDID support	EDID 1.3 compatible
	HDCP hardware support	HDCP is not supported
Input 4	Connector	DisplayPort
	Formats	Resolutions up to 2560x1600 @ 60 Hz (30 bits), per DisplayPort 1.1a Specification
	EDID and HDCP hardware support	EDID 1.3 compatible (HDCP is not supported)
Input 5	Connector	SD/HD/3G SDI on BNC connector
	Formats	SD-SDI per SMPTE 259M-C (NTSC/PAL resolution)
		HD-SDI per SMPTE 292M, 296M
		3G-SDI per SMPTE 425
	Loop-through	Re-clocked loop-through output

Output Specifications

The following table lists the DV-100 output specifications.

Table A-2. DV-100 Output Specifications

Output	Detail	Specification
HD-15	Connector	HD-15 VGA
	Format	NTSC/PAL composite on green pin NTSC/PAL Y/C video with bi-level sync on Y only: • Y on Green pin • C on Red pin SD YPbPr with bi-level sync HD YPbPr with tri-level sync per SMPTE 274 RGBHV/RGBS/RGsB computer video with bi-level sync
	EDID support	EDID 1.3 compatible

Table A-2. DV-100 Output Specifications

Output	Detail	Specification
HDMI	Connector	HDMI (Type A)
	Formats	RGB and YCbCr at 4:4:4, per HDMI 1.4 specification
		Resolutions up to 2048x1080p @ 60 Hz
	EDID support	EDID 1.3 compatible
	HDCP hardware support	HDCP is not supported

User Control Specifications

The following table lists DV-100 user control specifications.

Table A-3. DV-100 User Control Specifications

Parameter	Specification
Control Modes	The unit may be controlled from a computer, tablet, or smartphone.
	Control functions include: • Source input configuration • Test pattern selection • Transition effect selection and control
Front Panel Controls	Dimmable display screen Rotary encoder for easy menu navigation LED-lit buttons activate inputs, access key menus, manage transitions to a logo or internal black, and freeze the video.

Physical and Electrical Specifications

The following table lists DV-100 physical and electrical specifications.

Table A-4. DV-100 Physical and Electrical Specifications

Parameter	Specification
Power	100-240 VAC, 47-63 Hz, Auto-selecting 2.0A maximum
Mechanical	2 RU Rackmount Chassis
	H: 3.44 in (8.8 cm)
	W: 17 in (43.2 cm) without chassis handles, 19.06 in (48.4 cm) with chassis handles attached
	D: 17.09 in (43.4 cm) from front panel to rear panel, 18.51 in (47 cm) from front of Adjust knob to face of BNC connectors

Table A-4. DV-100 Physical and Electrical Specifications

Parameter	Specification
Weight	15.75 lb (7.1 kg)
Temperature	0-104 degrees Fahrenheit (0-40 degrees Celsius)
Humidity	0-95% non-condensing

Communications Specifications

The following table lists DV-100 communications specifications.

Table A-5. DV-100 Communications Specifications

Parameter	Specification
Ethernet	RJ-45, 10/100 Mbps Autosense

Standard Connector Pinouts

The following topics are discussed in this section:

- **Analog 15-pin D Connector Pinouts**
- **DisplayPort Connector Pinouts**
- **DVI Connector Pinouts**
- **Ethernet Connector Pinouts**
- **HDMI Connector Pinouts**

Analog 15-pin D Connector Pinouts

The following figure illustrates the analog 15-pin D connector:

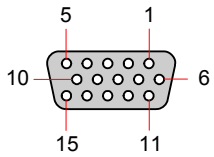


Figure A-1. Analog 15-pin D Connector

The following table lists Analog 15-pin D connector pinouts.

Table A-6. Analog 15-pin D Connector Pinouts

Pin	Signal	Pin	Signal
1	Red	9	
2	Green	10	GND
3	Blue	11	
4		12	
5		13	H Sync or C Sync
6	Red return	14	V Sync
7	Green return	15	
8	Blue return		

DisplayPort Connector Pinouts

The following figure illustrates the DisplayPort connector.

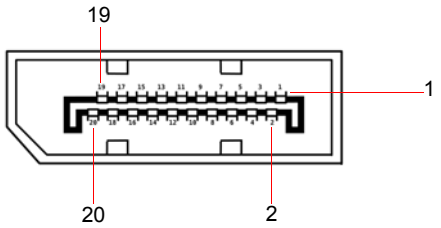


Figure A-2. DisplayPort Connector

The following table lists the DisplayPort connector pinouts.

Table A-7. DisplayPort Connector Pinouts

Pin	Signal	Pin	Signal
1	ML_Lane 0 (p)	11	GND
2	GND	12	ML-Lane 3 (n)
3	ML_Lane 0 (n)	13	CONFIG1 (connected to Ground)
4	ML-Lane 1 (p)	14	Config2 (connected to Ground)
5	GND	15	AUX CH (p)
6	ML_Lane 1 (n)	16	GND
7	ML-Lane 2 (p)	17	AUX CH (n)
8	GND	18	Hot Plug Detect
9	ML_Lane 2 (n)	19	Return (return for power)
10	ML_Lane 3 (p)	20	DP_PWR Power for connector (3.3 V, 500 mA)

DVI Connector Pinouts

The following figure illustrates the DVI connector.

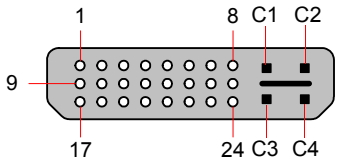


Figure A-1. DVI Connector

The following table lists DVI Connector pinouts. Please note:

- T.M.D.S = Transition Minimized Differential Signal
- DDC = Display Data Channel

Table A-8. DVI Connector Pinouts

Pin	Signal	Pin	Signal
1	T.M.D.S. Data 2-	15	ground (for +5V)
2	T.M.D.S. Data 2+	16	Hot Plug Detect
3	T.M.D.S. Data 2/4 Shield	17	T.M.D.S. Data 0-
4	T.M.D.S. Data 4-	18	T.M.D.S. Data 0+
5	T.M.D.S. Data 4+	19	T.M.D.S. Data 0/5 Shield
6	DDC Clock	20	T.M.D.S. Data 5-
7	DDC Data	21	T.M.D.S. Data 5+
8	Analog Vertical Sync	22	T.M.D.S. Clock Shield
9	T.M.D.S. Data 1-	23	T.M.D.S. Clock +
10	T.M.D.S. Data 1+	24	T.M.D.S. Clock -
11	T.M.D.S. Data 1/3 Shield	C1	Analog red
12	T.M.D.S. Data 3-	C2	Analog green
13	T.M.D.S. Data 3+	C3	Analog blue
14	+5V Power	C4	Analog H sync

Ethernet Connector Pinouts

The following figure illustrates the Ethernet connector.

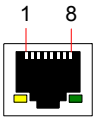


Figure A-2. Ethernet Connector

The following table lists Ethernet connector pinouts.

Table A-9. Ethernet Connector Pinouts

Pin	Signal	Wire Color
1	TX Data +	White / Orange
2	TX Data -	Orange
3	RX Data +	White / Green
4		Blue
5		White / Blue
6	RX Data -	Green
7		White / Brown
8		Brown

HDMI Connector Pinouts

The following figure illustrates the HDMI connector.

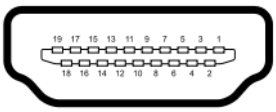


Figure A-3. HDMI Connector

The following table lists the HDMI connector pinouts.

Table A-10. HDMI Connector Pinouts

Pin	Signal	Pin	Signal
1	TMDS Data2+	11	TMDS Clock Shield
2	TMDS Data2 Shield	12	TMDS Clock-
3	TMDS Data2-	13	CEC
4	TMDS Data1+	14	
5	TMDS Data1 Shield	15	SCL
6	TMDS Data1-	16	SDA
7	TMDS Data0+	17	DDC/CEC/HEC Ground
8	TMDS Data0 Shield	18	+5 v Power (max 50 mA)
9	TMDS Data0-	19	Hot Plug Detect (All Versions) and HEC Data+
10	TMDS Clock+		

Input Resolutions

The table below lists available input formats supported on the DVI-I, DVI-D, HD-15, HDMI, DisplayPort, and SDI BNC connectors. An “x” in a cell indicates that the listed format can be processed by the connector.

For a list of the Colorspaces supported by each input connector, refer to **Selecting the Colorspace** on page 35 of Chapter 4.

Note

This table lists standard DV-100 formats. The list may change with each release. Please review the list of resolutions available with each new version of the firmware.

Table A-11. DV-100 Input Formats

		Connectors				
Format	**Colorspace**	**DVI**	**HD-15**	**HDMI**	**DP**	**SDI BNC**
NTSC (480i)	SMPTE, RGB		x			x
NTSC — 16:9	SMPTE, RGB		x			x
720x480p	SMPTE, RGB	x	x	x	x	
720x480p — 16:9	SMPTE, RGB	x	x	x	x	
PAL (576i)	SMPTE, RGB		x			x
PAL — 16:9	SMPTE, RGB		x			x
720x576p	SMPTE, RGB	x	x	x	x	
720x576p — 16:9	RGB	x	x	x	x	
640x480 @59.94	SMPTE, RGB	x	x	x	x	
640x480 @60	SMPTE, RGB	x	x	x	x	
640x480 60 VESA	SMPTE, RGB	x	x	x	x	
640x480 @72	SMPTE, RGB	x	x	x	x	
640x480 @75	SMPTE, RGB	x	x	x	x	
640x480 @85	SMPTE, RGB	x	x	x	x	
800x600 @50	SMPTE, RGB	x	x	x	x	
800x600 @56	SMPTE, RGB	x	x	x	x	
800x600 @59.94	SMPTE, RGB	x	x	x	x	
800x600 @60	SMPTE, RGB	x	x	x	x	
800x600 @72	SMPTE, RGB	x	x	x	x	
800x600 @75	SMPTE, RGB	x	x	x	x	
800x600 @85	SMPTE, RGB	x	x	x	x	

Table A-11. DV-100 Input Formats (Continued)

		Connectors				
Format	**Colorspace**	**DVI**	**HD-15**	**HDMI**	**DP**	**SDI BNC**
1024x768 @47.95	SMPTE, RGB	x	x	x	x	
1024x768 @48	SMPTE, RGB	x	x	x	x	
1024x768 @50	SMPTE, RGB	x	x	x	x	
1024x768 @59.94	SMPTE, RGB	x	x	x	x	
1024x768 @60	SMPTE, RGB	x	x	x	x	
1024x768 @70	SMPTE, RGB	x	x	x	x	
1024x768 @71.93	SMPTE, RGB	x	x	x	x	
1024x768 @72	SMPTE, RGB	x	x	x	x	
1024x768 @75	SMPTE, RGB	x	x	x	x	
1024x768 @85	SMPTE, RGB	x	x	x	x	
1152x864 @75	SMPTE, RGB	x	x	x	x	
1280x768 @47.95	SMPTE, RGB	x	x	x	x	
1280x768 @48	SMPTE, RGB	x	x	x	x	
1280x768 @50	SMPTE, RGB	x	x	x	x	
1280x768 @59.94	SMPTE, RGB	x	x	x	x	
1280x768 @75	SMPTE, RGB	x	x	x	x	
1280x800 @50	SMPTE, RGB	x	x	x	x	
1280x800 @59.94	SMPTE, RGB	x	x	x	x	
1280x800 @60	SMPTE, RGB	x	x	x	x	
1280x960 @50	SMPTE, RGB	x	x	x	x	
1280x960 @59.94	SMPTE, RGB	x	x	x	x	
1280x960 @60	SMPTE, RGB	x	x	x	x	
1280x960 @85	SMPTE, RGB	x	x	x	x	
1280x1024 @47.95	SMPTE, RGB	x	x	x	x	
1280x1024 @48	SMPTE, RGB	x	x	x	x	
1280x1024 @50	SMPTE, RGB	x	x	x	x	
1280x1024 @59.94	SMPTE, RGB	x	x	x	x	
1280x1024 @60	SMPTE, RGB	x	x	x	x	
1280x1024 @71.93	SMPTE, RGB	x	x	x	x	
1280x1024 @72	SMPTE, RGB	x	x	x	x	
1280x1024 @75	SMPTE, RGB	x	x	x	x	

Table A-11. DV-100 Input Formats (Continued)

		Connectors				
Format	**Colorspace**	**DVI**	**HD-15**	**HDMI**	**DP**	**SDI BNC**
1280x1024 @85	SMPTE, RGB	x	x	x	x	
1360x768 @60	SMPTE, RGB	x	x	x	x	
1364x768 @47.95	SMPTE, RGB	x	x	x	x	
1364x768 @48	SMPTE, RGB	x	x	x	x	
1364x768 @50	SMPTE, RGB	x	x	x	x	
1364x768 @59.94	SMPTE, RGB	x	x	x	x	
1364x768 @75	SMPTE, RGB	x	x	x	x	
1364x1024 @47.95	SMPTE, RGB	x	x	x	x	
1364x1024 @48	SMPTE, RGB	x	x	x	x	
1364x1024 @50	SMPTE, RGB	x	x	x	x	
1364x1024 @59.94	SMPTE, RGB	x	x	x	x	
1364x1024 @75	SMPTE, RGB	x	x	x	x	
1366x768 @50	SMPTE, RGB	x	x	x	x	
1366x768 @59.94	SMPTE, RGB	x	x	x	x	
1366x800 @50	SMPTE, RGB	x	x	x	x	
1366x800 @59.94	SMPTE, RGB	x	x	x	x	
1366x800 @60	SMPTE, RGB	x	x	x	x	
1440x900 @60	SMPTE, RGB	x	x	x	x	
1440x900 @75	SMPTE, RGB	x	x	x	x	
1440x900 @85	SMPTE, RGB	x	x	x	x	
1400x1050 @48	SMPTE, RGB	x	x	x	x	
1400x1050 @50	SMPTE, RGB	x	x	x	x	
1400x1050 @59.94	SMPTE, RGB	x	x	x	x	
1400x1050 @60	SMPTE, RGB	x	x	x	x	
1400x1050 @75	SMPTE, RGB	x	x	x	x	
1536x768 @50	SMPTE, RGB	x	x	x	x	
1536x768 @59.94	SMPTE, RGB	x	x	x	x	
1600x1200 @47.95	SMPTE, RGB	x	x	x	x	
1600x1200 @48	SMPTE, RGB	x	x	x	x	
1600x1200 @50	SMPTE, RGB	x	x	x	x	
1600x1200 @59.94	SMPTE, RGB	x	x	x	x	

Table A-11. DV-100 Input Formats (Continued)

		Connectors				
Format	**Colorspace**	**DVI**	**HD-15**	**HDMI**	**DP**	**SDI BNC**
1600x1200 @60	SMPTE, RGB	x	x	x	x	
1600x1200 @75	SMPTE, RGB	x[2]	x[1]		x	
1680x1050 @60	SMPTE, RGB	x	x	x	x	
1280x720p @23.98	SMPTE, RGB	x	x	x		x
1280x720p @24	SMPTE, RGB	x	x	x		x
1280x720p @25	SMPTE, RGB	x	x	x		x
1280x720p @29.97	SMPTE, RGB	x	x	x		x
1280x720p @30	SMPTE, RGB	x	x	x		x
1280x720p @48	SMPTE, RGB	x	x	x	x	
1280x720p @50	SMPTE, RGB	x	x	x	x	x
1280x720p @59.94	SMPTE, RGB	x	x	x	x	x
1280x720p @60	SMPTE, RGB	x	x	x	x	x
1920x1080p @23.98	SMPTE, RGB	x	x	x	x	x
1920x1080p @24	SMPTE, RGB	x	x	x	x	x
1920x1080p @25	SMPTE, RGB	x	x	x	x	x
1920x1080p @29.97	SMPTE, RGB	x	x	x	x	x
1920x1080p @30	SMPTE, RGB	x	x	x	x	x
1920x1080p @48	SMPTE, RGB	x	x	x	x	
1920x1080p @50	SMPTE, RGB	x	x	x	x	x
1920x1080p II @50	SMPTE, RGB	x	x	x	x	
1920x1080p @59.94	SMPTE, RGB	x	x	x	x	x
1920x1080p @60	SMPTE, RGB	x	x	x	x	x
1920x1080sF@23.98	SMPTE, RGB	x	x	x	x	x
1920x1080sF@24	SMPTE, RGB	x	x	x	x	x
1920x1080sF@25	SMPTE, RGB	x	x	x	x	x
1920x1080sF@29.97	SMPTE, RGB	x	x	x	x	x
1920x1080sF@30	SMPTE, RGB	x	x	x	x	x
1920x1080i @50	SMPTE, RGB	x	x	x	x	x
1920x1080i @59.94	SMPTE, RGB	x	x	x	x	x

[1] Input only

[2] Dual-link DVI

Table A-11. DV-100 Input Formats (Continued)

		Connectors				
Format	**Colorspace**	**DVI**	**HD-15**	**HDMI**	**DP**	**SDI BNC**
1920x1080i @60	SMPTE, RGB	x	x	x	x	x
1920x1200p @50	SMPTE, RGB	x	x	x	x	
1920x1200p @59.94	SMPTE, RGB	x	x	x	x	
1920x1200p @60	SMPTE, RGB	x	x	x	x	
1920x1200 II @60	SMPTE, RGB	x[2]	x[1]		x	
Apple 1200p @60	SMPTE, RGB	x	x	x	x	
1792x1344p @60	SMPTE, RGB	x[2]	x[1]		x	
1856x1392p @60	SMPTE, RGB	x[2]	x[1]		x	
1920x1440p @60	SMPTE, RGB	x[2]	x[1]		x	
2K analog @59.94	SMPTE, RGB	x[2]	x[1]		x	
2048x1080p @23.98	SMPTE, RGB	x	x	x	x	x
2048x1080p @24	SMPTE, RGB	x	x	x	x	x
2048x1080p @25	SMPTE, RGB	x	x	x	x	x
2048x1080p @29.97	SMPTE, RGB	x	x	x	x	x
2048x1080p @30	SMPTE, RGB	x	x	x	x	x
2048x1080p @48	SMPTE, RGB	x	x	x	x	
2048x1080p @50	SMPTE, RGB	x	x	x	x	x
2048x1080p II @50	SMPTE, RGB	x	x	x	x	
2048x1080p @59.94	SMPTE, RGB	x	x	x	x	x
2048x1080p @60	SMPTE, RGB	x	x	x	x	x
2048x1080p II @60	SMPTE, RGB	x[2]	x[1]		x	
2048x1080sF @23.98	SMPTE, RGB	x	x	x	x	x
2048x1080sF @24	SMPTE, RGB	x	x	x	x	x
2048x1080sF @25	SMPTE, RGB	x	x	x	x	x
2048x1080sF @29.97	SMPTE, RGB	x	x	x	x	x
2048x1536p @60	SMPTE, RGB	x[2]	x[1]		x	
2304x1440P @60	SMPTE, RGB	x[2]	x[1]		x	
2560x1440p @50	SMPTE, RGB	x[2]	x[1]		x	
2560x1440p @59.94	SMPTE, RGB	x[2]	x[1]		x	

[1] Input only

[2] Dual-link DVI

Table A-11. DV-100 Input Formats (Continued)

		Connectors				
Format	**Colorspace**	**DVI**	**HD-15**	**HDMI**	**DP**	**SDI BNC**
2560x1440p @60	SMPTE, RGB	x[2]	x[1]		x	
2560x1600p @50	SMPTE, RGB	x[2]	x[1]		x	
2560x1600p @59.94	SMPTE, RGB	x[2]	x[1]		x	
2560x1600p @60	SMPTE, RGB	x[2]	x[1]		x	

[1] Input only

[2] Dual-link DVI

B. Upgrading Firmware

In This Appendix

The following topics are discussed in this Appendix:

- Upgrading Firmware Using the Front Panel
- Upgrading Firmware Using the Web Interface

Upgrading Firmware Using the Front Panel

- To determine whether a new version of the DV-100 firmware is available, use the following procedure:

1. Verify that the DV-100 has internet access. Contact your system administrator if necessary.
2. Select **Setup** > **Firmware Upgrade** > **Web Upgrade**. The submenu shown in the following illustration appears.

Figure B-1. Web Firmware Upgrade Submenu

3. Select **Check**.

   A message informs you if a new firmware version is available. To install the latest version over the internet, refer to the following section, **Automatically Upgrading Firmware Using the Web Interface**.

   If you wish to install a different version, refer to the section of this chapter titled **Selecting a Firmware File to Upload with the Web Interface** on page 132.

   If you are not connected to the internet, a message prompts you to check the connection.

Upgrading Firmware Using the Web Interface

Before you begin the firmware upgrade, ensure that your PC, laptop, or mobile device uses one of the following operating systems:

- Windows® XP, Windows® Vista™, or Windows® 7
- Mac OS® X
- Red Hat® Linux®

You must also know the IP address of your DV-100 unit, which you can find by selecting **Setup** > **System** > **Ethernet**.

Automatically Upgrading Firmware Using the Web Interface

- Use the following procedure to automatically upgrade DV-100 software with the Web Interface:

1. Open a compatible web browser, and enter the DV-100's IP address in the address bar. The web page shown in the following illustration appears.

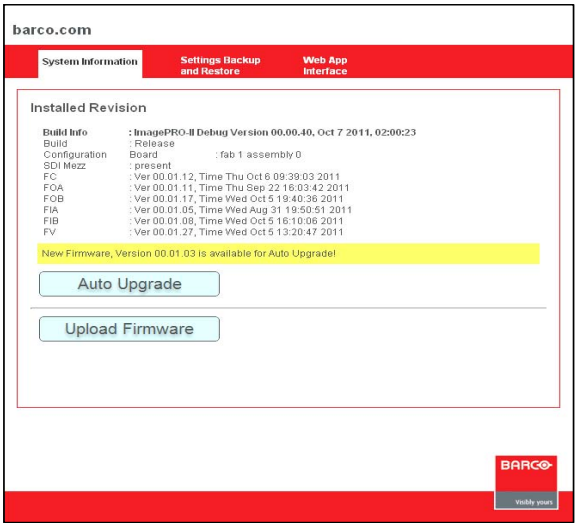

barco.com
System Information
Settings Backup and Restore
Web App Interface
Installed Revision
Build Info : ImagePRO-II Debug Version 00.00.40, Oct 7 2011, 02:00:23
Build : Release
Configuration Board : fab 1 assembly 0
SDI Mezz : present
FC : Ver 00.01.12, Time Thu Oct 6 09:39:03 2011
FOA : Ver 00.01.11, Time Thu Sep 22 16:03:42 2011
FOB : Ver 00.01.17, Time Wed Oct 5 19:40:36 2011
FIA : Ver 00.01.05, Time Wed Aug 31 19:50:51 2011
FIB : Ver 00.01.08, Time Wed Oct 5 16:10:06 2011
FV : Ver 00.01.27, Time Wed Oct 5 13:20:47 2011
New Firmware, Version 00.01.03 is available for Auto Upgrade!
Auto Upgrade
Upload Firmware
BARCO

Figure B-2. System Information Tab

This page provides information about the current firmware version. In addition, there are two options:

~ **Auto Upgrade**

~ **Upload Firmware**

2. To detect and upload new firmware automatically, click **Auto Upgrade**.

   If a new firmware version is available, it loads and a confirmation message appears. This process may take several seconds.

Selecting a Firmware File to Upload with the Web Interface

- Use the following procedure to select a firmware version to install using the Web Interface:

1. On the **System Information** tab, click **Upload Firmware**.

   The **System Firmware Upgrade** window appears.

2. Click **Choose File**.

3. On the window that appears, navigate to and select the firmware file you want to upload.
4. On the **System Firmware Upgrade** window, click **Submit**.

C. Contact Information

In This Appendix

The following topics are discussed in this Appendix:

- **Warranty**
- **Return Material Authorization (RMA)**
- **Contact Information**

Warranty

All video products are designed and tested to the highest quality standards and are backed by a full 3-year parts and labor warranty. Warranties are effective upon delivery date to customer and are non-transferable. Barco warranties are only valid to the original purchaser/owner. Warranty related repairs include parts and labor, but do not include faults resulting from user negligence, special modifications, lightning strikes, abuse (drop/crush), and/or other unusual damages.

The customer shall pay shipping charges when unit is returned for repair. Barco will cover shipping charges for return shipments to customers.

Return Material Authorization (RMA)

In the unlikely event that a product is required to return for repair, please call the **Technical Support / Customer Service** direct line, and ask to receive a Return Merchandise Authorization number (RMA).

- (866) 374-7878

RMA Conditions are listed below:

a. Prior to returning any item, you must receive a **Return Merchandise Authorization** (RMA) number.

b. All RMA numbers must appear on their return-shipping label.

c. RMA numbers are valid for ten (10) days from issue date.

d. All shipping and insurance charges on all RMAs must be prepaid by the customer

Contact Information

Barco Media and Entertainment
11101 Trade Center Drive
Rancho Cordova, California 95670
USA

- Telephone: (916) 859-2500
- Fax: (916) 859-2515
- Website: **www.barco.com**

Sales Contact

- Direct: (916) 859-2505
- Toll Free: (888) 414-7226
- E-mail: folsomsales@barco.com

Barco N.V.
Noordlaan 5
8520 Kuurne
BELGIUM

- Telephone: +32 56.36.82.11
- Fax: +32 56.35.16.51
- Website: **www.barco.com**

Technical Support (USA)

- Telephone: (866) 374-7878 — 6 a.m. to 10 p.m. (PST), 7 days per week
- E-mail: folsomsupport@barco.com
- Online: **www.barco.com/esupport**

Technical Support (Europe, Middle East, Asia)

- Telephone: 0800900410
- Online: **www.barco.com/support/eSupport.aspx**

Index

Numerics

1-1 Sample 36
1-1 Timing Adjust Menu 41
3-2 pulldown sequence 43

A

AC connector 12
Acrobat usage, navigating and searching 2
Adapter information 17
Address, company iii
ADJUST knob
    scrolling with 46
    usage 9
Analog
    15-pin D connector pinouts 120
    output connector 13
Analog output connectors 21
AOI Raster Box option 55
Area of Interest 78, 106
    definition 3
    menu 51
    raster box 55
    settings 51–53
Aspect ratio
    and image sizing 36
    preset 39
    submenu 36, 101

B

Back button (Web) 92
Barco
    sales contact information 136
    technical support information . . . . . iii, 136
BLACK button 8, 73, 76–77
Black Fade transition mode 67
Black Invalid 69
BLK button (Web) 99
BNC breakout cable 6
Brightness
    input 42
Brightness (Web) 101
Button states (front panel) 12
Buttons
    Back (Web) 92
    BLACK 8, 73, 76–77
    BLK (Web) 99
    ESC 10
    Front Panel Lock (Web) 99
    FRZ (FREEZE) 11
    FRZ (Web) 100
    input 11
    Input and Effects (Web) 92
    LOGO 8, 11, 73
    LOGO (Web) 99
    Menu access 10
    Navigation (Web) 92
    On-Off (Web) 93
    paging (Web) 95
    PAN/ZOOM 10
    Refresh (Web) 91
    Save System State (Web) 99
    SEL 10
    SETUP 10, 32
    Setup (Web) 92
    TEST PAT 10

C

Cable information 17
Change history viii
Chapter structure 1
Chassis 16
Chassis handles 8
Color
    space 35

Color Balance page (Web) 101
Colorspace options 35
Communications specifications 119
Company address iii
Composite video signal
definition 3
Computer video
definition 3
Configuration files
filename length 46
Connection
analog format table 6
Connectivity diagram 19
Connectors
AC 12
analog 15-pin D pinouts 120
analog output 21
DisplayPort pinouts 121
DVI pinouts 122
DVI-I input 13
Ethernet pinouts 123
HD-15 output 13
HDMI input 13
HDMI pinouts 124
SDI-1 input 13
Contrast 41
input 42
Contrast (Web) 101
Copyright ii
Cursors
edit 28
navigation 9, 28
Custom Formats Menu 57
Customer Support information 79

D

Deinterlacing
defined 43
field to frame 44
motion adaptive 44
Delete Config Menu 48
Delete Format Menu 61
Delete View Menu 65
Diag Motion setting 55
DisplayPort input connector 13
Documentation
change history viii
conventions 2
symbols 2
terms 2
DVI connector pinouts 122
DVI-I input connector 13

E

Edge Timing Adjust Menu 42
EDID (Extended Display Identification Data) 71–72
compatible input connectors 71
Electrical specifications 118
Equipment
list, installation 20
ESC button 10, 29
Ethernet
connections 20
connector pinouts 123
port 13

F

Factory Reset
and logos 76
options 80
FCC statement ii
features 4
Flick scrolling technique (Web) 95
Format 34
best guess 34, 47
connection table, analog 6
deleting 61
input video 9, 34
output video 9, 13
saving 59
Format Saved message 60
Front panel
controls 8
online access 111–114
Front Panel Lock button (Web) 99
FRZ (FREEZE) button 11
Functions 30

G

Gamma settings 43
Gamma(Web) 101
Genlock
status indicator 9, 31

Genlock Menu 53
Guarantee and compensation ii

H

handles 8
Hardware
installation 15
safety instructions 16
HDCP
not supported 4
HDMI
input connector 13
pinouts 124

I

Image Cut transition 66
Image sampling 36
Images
masking 39
resetting size of 38
sizing 36
In Auto Acquire
and transitions 66
setting 55
Initialization 24
Initialization messages 24
Input
buttons 11
technical specifications 116
type 34
type options 34
video format 9
Input Color Balance Menu 43
Input connectors
DVI-I 13
EDID-capable 71
HDMI 13
SDI-1 13
Input Menu 33
Inspection 16
Installation
equipment list 20
hardware 15
rack-mount 16
safety precautions 16
site preparation 16
unpacking and inspection 16
Invalid Signal indicator 31, 34
Invalid Signal message 56

L

LED Setup Menu 78, 106
Lists (Web) 94–96
LOGO
input setup menu functions 74
LOGO button 8, 11, 73
LOGO Button (Web) 99
Logo Menu 74
Logo transition mode 67
Logos
capturing 74
definition 3
deleting 75, 76
displaying 75–76
erasing 76
file types of 88
transitioning with 66

M

Masks
preset 39
removing 41
maximum resolution 4
Menu functions
LOGO input setup 74
Menu tree 27
Input 33
Output 49
System 68
Web Interface 97
Menus
1-1 Timing Adjust 41
Area of Interest 51
Aspect Ratio 36, 101
conventions and usage 28
Custom Formats 57
Delete Config 48
Delete Format 61
DeleteView 65
Edge Timing Adjust 42
edit cursor in 28
exiting 29
flick scrolling technique (Web) 95
Genlock 53
Input 33
Input Color Balance 43
LED Setup 78, 106
Logo 74
navigation cursor in 28

Processing 43
Recall Config 47
Recall View 65
Save Format As 59
Save View 64
scrolling through 29
Setup 32
Side (Web) 91, 93–94
Sizing Adjust 36
Status 9, 31
System 69–73
Tech Support 79
Test Pattern 54
Transition 66
Views 62
Zoom/Pan 62
Messages
Config Saved 46
Format Saved 60
initialization 24
Invalid Signal 56

N

Navigation button (Web) 92
Navigation cursor 9
Notice ii
NTSC standard
definition 3

O

On-Off buttons (Web) 93
Operators safety summary iv
Output
connections 21
menu tree 49
technical specifications 117
Output connectors
analog 21
HD-15 13
Output Format setting 50
Output video format 9

P

Paging buttons (Web) 95
PAL standard
definition 3
PAN/ZOOM button 10
Panel
front 8
rear 12, 13
PDF file usage, navigating and searching 2
Physical specifications 118
Pinouts 120
analog 15-pin D connector 120
DisplayPort 121
DVI connector 122
Ethernet connector 123
Ports
Ethernet 13
Power consumption 17
Powering up 24
Preset masks 39
Processing Menu 43
Product disposal v
Pulldown sequence 43

R

Raster box
Area of Interest 55
Rear panel 12, 13
Recall Config Menu 47
Recall View Menu 65
Refresh button 91
Remote control options 6
Reset Config setting 54
Resetting
Area of Interest defaults 53
image size 38
input color balance settings 43
input configurations 47
masking effects 41
Pan/Zoom settings 63
the default view 63
Resolutions
EDID preferred 71
Return material authorization 135
RGB signal
defined 3
RGBHV signal
definition 3
RGBS signal
definition 3
RGsB signal
definition 3
RMA 135
RoHS Compliance
Chinese Mainland vi
Turkey v

S

Safe installation 16
Safety
  summary iv
Sales contact information 136
Sample Phase setting 41
Sampling Mode 36
Save Config setting 54
Save Format As Menu 59
Save Snapshot option 79
Save System State button (Web) 99
Save System State function 73
Save View Menu 64
SDI-1 input connector 13
SEL button 10, 29
Serial Digital Interface (SDI) 3
SETUP button 10, 32
Setup button (Web) 92
Setup Menu 32
Side Menu 91
Side Menu (Web) 93–94
Signals
  auto-acquisition 35
  composite 3
  computer video 3
  RGB 3
  RGBHV 3
  RGBS 3
  RGsB 3
  SDI 3
  Y/C 3
Sizing Adjust Menu 36
  and preset masks 39
Sliders (Web) 93
Software
  version 24
Source
  connections 20
Specifications 115
  communications 119
  electrical 118
  input 116
  output 117
  physical 118
  pinouts 120
  user control 118
Standards
  NTSC 3
  PAL 3
Status Menu 9
Support, technical information . . . . . iii, 136
Symbols 2
System Menu 69–73
System Menu tree 68

T

Table
  analog format connections 6
Tech Support Menu 79
Technical support information . . . . . iii, 136
TEST PAT button 10
Test Pattern Menu 54
Trademarks iii
Transition Menu 66
Transitions
  setting 67
transitions
  and In Auto Acquire 66
  types 66
Type
  input 34

U

Unpacking 16
User control, specifications 118

V

video format
  input 9
  output 9
View
  defined 62
Views
  deleting 65
  recalling 63
Views Menu 62

W

Warranty 135
Web Interface 83–88
  compatible browsers 21
  connection requirements 21

WEEE product disposal v
WQXGA resolution 4

Y

Y/C signal 3

Z

Zoom/Pan Menu 62